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To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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NORTH ATLANTIC OCEAN.

The Atlantic Pilot chart states that during these months it is well for masters of vessels sailing West Indian waters and the seas adjacent to the coasts of the United States to be at all times prepared to encounter these storms, and to keep a constant watch for the signs of their approach, as they are almost without exception attended by wind and seas of such violence as to threaten disaster to such vessels as happen to be in the neighborhood of the storm center.

The tropical cyclonic storm of the North Atlantic, better known under the name of "West Indian Hurricane," is of the same general character as other cyclonic storms, with the exception of the fact that in the early stages of its career the motion of the storm center has always a certain amount of westing, due to the general westward motion of the atmosphere in the low latitudes in which the storm originates. Its birthplace is the northern limit of the equatorial belt of calms, between the parallels of 10 degrees N. and 20 degrees N., and to the eastward of the Lesser Antilles—in a region, consequently, throughout which the atmospheric equilibrium is unstable, and uprising columns of warm air are apt to be frequent, the place of the ascending air being taken by the cooler and consequently denser surrounding air, which rushes in from all sides to fill the vacancy. Such a system of air currents at any point of the earth's surface not closer to the equator than six or eight degrees, tends to give rise to an atmospheric whirl. The majority of these whirls are probably promptly dissipated; but under favorable circumstances one may be maintained, and borne to the westward by the general circulation of the atmosphere, as an eddy is borne along by the current of a river.

In its earlier stages the whirl is small, probably less than 100 miles in diameter, but its growth is rapid, so that in the middle and higher latitudes it may attain a diameter exceeding 500 or even 1,000 miles. Fully developed, the storm consists of a central area of low barometer, around

which the winds circulate in a negative direction, i. e., in a direction contrary to the motion of the hands of a clock, at the same time drawing slowly inward; the path followed by the air in approaching the center being in many respects similar to the path followed by water escaping from a circular basin by an opening in the bottom. Although not strictly true, for ordinary purposes, the amount of this indraught is assumed to be two points throughout the extent of the storm. North of the center, the wind will thus blow from about ENE.; south of the center, from about WSW.; to the east of the center, south-southeasterly winds will prevail; to the west of the center, north-northwesterly. To fix the approximate direction of the storm center from the vessel, it is, therefore, only necessary to face the wind, in which case the storm center will bear ten points to the observer's right; and by assuming a rough value for its distance, remembering that, in general, as long as the barometer continues to fall this distance, diminishing, it is often possible by plotting the relative position of vessel and storm center at the close of each hour, or even more frequently, to obtain a fair idea of the path along which the latter is traveling. In this operation the course and distance made by the vessel must of course be considered.

VESSELS CLASSED.

We note that the American Shipmasters' Association have classed or rated in the "Record of American and Foreign Shipping" the following vessels: Steamer Evelyn, barks H. G. Johnson and Saranac, three-masted schooners John R. Fell, Milton and Susan N. Pickering, half-brig Starlight, British schooner France B. Hiller, British bark Greenland, British three-masted schooner Helen E. Kenney and British screw steamer Yhuringia.

THE FRENCH MERCANTILE MARINE.

With a view to measures being taken at an early date for the encouragement of the French Mercantile Marine, the Minister of Commerce has caused a circular to be sent to all the Chambers of Commerce asking the following questions: 1. To what cause do you attribute the decadence of our mercantile marine, and what are the remedies which you would propose for the amelioration of the present state of things? 2. What are in your opinion the chief difficulties in France which the building of merchant vessels has to contend with, and what remedy would you propose? 3. What means would you suggest to secure an increase of shipping to and from French ports? Interested parties will be heard before a special commission at the Ministry of Commerce between the 25th of June and the 14th of July.

It is a fact, perhaps not generally known, that one dollar a head is exacted by the government from all immigrants arriving in this country by vessels from foreign ports. The poll tax, if such it might be called, used to be 50 cents, but a little over a year ago it was doubled. When a vessel enters at the Custom House, the captain makes affidavit as to the number of passengers he has on board and their nationality. American citizens and foreigners who are en route and have tickets for some other country are not taxed, but for all the rest the entry clerk adds one dollar each to the fee bill (under the head of Immigration Fund) which the owners or agents of the vessel have to pay to the Custom House cashier. The amount collected from immigrants in New York must be something enormous. The law is very strict in regard to the names of all passengers on board a vessel being placed on an official passenger list for entry at the Custom House.

JAPAN AND HAWAII.

If it were for the advantage of the United States to annex Hawaii, as it most assuredly is not, we should be prepared to proceed to the completion of the pending treaty whether Japan liked it or not. But we should also be fair and honorable in our dealings with the imperial government, as well as ready for war. We should be prepared to define the rights and privileges which Japanese subjects in the islands should enjoy under the government of the United States, and to protect San Francisco with battle-ships. The Japanese Government has a right to complain of bad treatment at our hands, and we should right the wrong that has already been done, whether through a broken promise or a misunderstanding. If, after that, there be trouble and we insist on taking Hawaii, we should have armor plate enough for our three ships now in process of construction. If there is to be a serious international quarrel on this subject, the side of this country should not be tainted with even the appearance of bad faith, nor should the Pacific Coast be at the mercy of Japanese gunboats. Some assurance should be given to the Japanese government that will eliminate from the unpleasant situation the slight chance of a war in the Pacific, for which Congress has refused to prepare.

Moreover, assuming that we are to proceed further in this annexation folly; that we are to change the historic policy of the republic, we would better not invite too much trouble. We have the best of reasons for believing that at present Japan has no expectation of going to war with us on this issue, but if we are really to become a power in the Pacific we ought not to cultivate enmities in that quarter of the globe, or else we ought to make ready to meet the consequences.—Harper's Weekly.

SHIPYARD WORK.

Riebolt Wolter & Co., proprietors of the shipyard and floating dry dock at Sturgeon Bay, Wis., report that they have been very busy during the past month with many orders booked well ahead, although new work is somewhat scarce. Riebolt, Wolter & Co. is one of the most reliable firms on the lakes and any work they do is always guaranteed.

THE BUREAU OF FOREIGN COMMERCE.

The Bureau of Statistics, Department of State, is now known as the Bureau of Foreign Commerce, in accordance with the following order of the Secretary of State:

Department of State,
Washington, July 1, 1897.
Under the authority conferred upon me by chapter 268, United States Statutes at Large, Fifty-fourth Congress, second session, under the heading "Publication of Diplomatic, Consular and other commercial reports," the name of the Bureau of Statistics of this Department is hereby changed to the Bureau of Foreign Commerce, and the title of the Chief of the Bureau of Statistics shall hereafter be Chief of the Bureau of Foreign Commerce.

JOHN SHERMAN, Secretary of State.

During the fiscal year ended June 30, there were built in the United States and officially numbered 729 vessels of 177,643 gross tons, compared with 709 vessels of 203,977 tons for the previous year. The decrease is almost wholly in wooden tonnage, which for 1897, amounts to 64,940 tons, compared with 94,715 tons for 1896. Of the total construction 347 vessels of 113,065 tons were steam vessels compared with 322 of 134,947 tons for the previous year. Steel steamers built on the Great Lakes numbered 15 of 55,868 tons, compared with 24 of 56,020 tons for the previous year.

NEWS AROUND THE LAKES.

BUFFALO.

Special Correspondence to the Marine Record.

Capt. Todd has taken charge of the Lehigh Liner Oceanica.

The citizens of Black Rock have presented the new steamer of that name with a set of colors.

The steamers Owego and John W. Moore as well as the canal boat Niobe had minor harbor casualties on Tuesday, the latter sunk and her cargo of cement and hemp valued at \$4,000 is likely to be a total loss.

The Queen City is now bound down from Duluth with a cargo of 5,000 tons of iron ore to be discharged at the Minnesota dock and forwarded to eastern Pennsylvania furnaces. There is likely to be a much larger trade in this direction than ever before and from present indications this will become quite an important iron ore receiving port.

The schooner A. J. Rogers was libeled twice during the week. On Tuesday for a \$38 claim. This method of detaining a vessel is altogether too handy and calls for an amendment of the libel laws at lake ports.

There has been a shortage of coal for shipments here this week but a few charters are made each day at the old rate, viz. 20 cents to the head of Lake Superior or Lake Michigan.

On being docked it was found that the bottom of the schooner G. B. Owen was a good deal more damaged than was anticipated and she will require a whole new bottom in places, as her floors, as well as the bottom planking are stove in. This is another Ballard's Reef pill for the underwriters to swallow. Geo. L. McCurdy of Chicago in behalf of the insurance companies, did not take hold of this question of clearing obstructions a day too soon, if underwriters are to be given a chance to do a profitable and legitimate business.

CLEVELAND.

Special Correspondence to the Marine Record.

The Cleveland Dry Dock Company docked the steamer H. D. Coffinberry to have her butts calked, Geo. Presley for searching up and the schooner Champion for calking and some new work.

Work at the Ship Owners' Dry Dock has been lively this week. The Alexander Holley, J. H. Rutter, Jesse Farwell, and tug Alva B., were dry docked for various work on them and the steamers Continental and Carnegie received repairs without going into dock.

Fully a dozen heavy damage cases, chiefly bottom damage, caused through striking boulders in the rivers have taken place within as many days and the underwriters must have suffered very heavily or will before the collision and grounding cases are all adjusted.

Now it appears that Capt. Nickerson has been appointed as maritime agent of the Mutual Life Insurance Company, New York, for the State of Ohio, Capt. V. D. Nickerson is energetic and well acquainted with the marine public, and I think that Capt. Freeman's appointment is well placed.

The local inspectors of steamboats, as also their assistants at this port, endeavor to carry out the laws in the most impartial manner possible. While not being arbitrary, they are by no means lax or lenient and it is a question if any district in the service is any better if as well administered.

On account of the grain rush it was thought that ore rates would go up a notch this week, but the best offerings known was but 60 cents from the head of the lakes up to October 1, and 65 cents to November 1. The Escanaba rate remained unchanged, viz.: 40 cents to Lake Erie ports. Very little has been done in coal and that only at the 20 cent rate.

Our old friend, Capt. D. D. McDonald, in San Diego, Cal., remembers us again this week. The Captain navigated the lakes for 36 years and holds a masters license of the 26th issue, extending from Ogdensburg to Chicago and Duluth Bays and rivers, also to the Pacific Coast. There is no more experienced man in the service of the U. S. mercantile marine than is Capt. McDonald, and I would further say that Capt. Orville Green, one of the most successful masters on the lakes is sponsor for all of Capt. McDonald's attributes, or at least, a part of them. Capt. McDonald is A1, and still believes in holding to the lakes, although he has a lucrative business on the Pacific Slope.

The coal miners' strike seems to be no nearer a settlement now than it was a couple of weeks ago, although hundreds of the miners are beginning to feel the pinch of poverty. The operators say that it is simply ruination for them to raise wages. It is to be hoped that a compromise will be effected at an early date. The scarcity of coal has not had such a bad effect on shipping or manufacturing industries as was expected. In shipping circles this is due in a great measure to brisk grain chartering.

Work on the two new revenue cutters building at the yards of the Globe Iron Works Co., is progressing fairly well and this with the usual amount of repair work on iron and steel hulls, engines and boilers keeps these yards busy enough to give employment to a small army of skilled workmen.

The new Wolvin Line steamer Empire City, built at the yards of the Cleveland Ship Building Co., will be ready

for work in a few days. She has been detained for some time owing to the non-arrival of her Babcock & Wilcox water tube boilers recently shipped from New York. The Empire City is 425 feet over all and will no doubt prove to be one of the largest cargo carriers ever built on the lakes.

DETROIT.

Special Correspondence to the Marine Record.

A special to the Toledo Blade from Sandusky says: U. S. Government Steamboat Inspectors Judson and Pleitz, of Cleveland, made a raid in this harbor on Monday and as a result, three boats were tied to their docks all day. The steamer A. Wherle, jr., was found to be short one life boat, and will not be allowed to run until one is procured; the tug Protection will have to patch a big hole in her boiler, cut by one of the inspectors during the test, and the tug Peerless will also be obliged to get a new life boat before she can put to sea again. The steamer Newsboy, running to Johnson's Island a few days ago, was obliged to ship an assistant engineer.

Perhaps the most generous man in the matter of passes is Mr. A. A. Shantz, general passenger agent of the D. & C. line of steamers. Mr. Shantz has been kind enough to supply a pass to a number of editors of weekly papers in small country towns, on the steamers of his line. After sending one to a Bucyrus paper he was confronted by the request that another should be sent to the partner of the editor. Mr. Shantz's good nature was even proof against being worked so palpably, and he sent the extra pass. By the next mail came another request that two passes should be sent to two young lady friends who desired to take a trip up the lakes. Not wishing to fill the D. & C. steamers with "young lady friends" from Bucyrus on passes, to the exclusion of the large list of paying passengers who are now guests of the D. & C. company, Mr. Shantz politely refused, and immediately received a most scorching letter from the B. E., in which he said if a simple little request could not be politely acceded to, he should feel it his duty to withdraw the support of his paper from the line. As yet Mr. Shantz has not perceived any great falling off in the passenger lists of the D. & C. steamers.

CHICAGO.

Special Correspondence to the Marine Record.

Capt. B. Boutel, of Bay City, was in Chicago Tuesday. W. I. Babcock, manager of the Chicago Shipbuilding Co., arrived home Sunday.

At the Chicago Ship Building Company's shipyard the schooner Thomas H. Howland had her topsides calked. The steamer Roanoke is in dock for some plates on bottom. The barge Manda received some repairs.

Capt. John Prindiville chartered the steamer C. A. Street and consorts Lozen and Godfrey for corn to Kingston at 1-2 cents; steamer George Stone for wheat to Fairport at 1-2 cents; steamer Vega chopped oats to Buffalo at 1-4 cents.

J. J. Rardon & Co., chartered the steamer Rappahan-nock for corn to Buffalo at 1-3-8 cents; steamer Phenix for wheat to Buffalo at 1-2 cents; steamer City of London for corn to Buffalo at 1-3-8 cents; steamer Rosedale for wheat to Kingston at 2-5-8 cents.

At the Independent Tug Lines floating dry dock the steamer Van Raalte is on the dock for some repairs and re-calking; the tug Mentor was in to have a leak stopped; the tug Relief for a new wheel and some calking; the tug Charnley to have her wheel fastened.

The Northwestern Elevator in the north branch of Chicago River was completely destroyed by fire and explosion of grain dust last Thursday evening. The explosion was the cause of very sad fatalities, amongst Chicago firemen who were fighting the fire. Six of the brave fellows lost their lives and about forty others were more or less injured by the falling walls and debris of the elevator.

H. W. Cook & Co., chartered the steamer New Orleans for chopped oats to Buffalo at 1-4 cents; steamer Fred Pabst for corn to Buffalo at 1-3-8 cents; steamer Langell Boys and consort Comstock for corn and oats to Port Huron at 1-8 cents; steamer Aztec and consort Zapotec corn to Ogdensburg at 2-1-2 cents free of tolls; steamer Katahdin wheat to Kingston 2-1-2 cents free of tolls; schooner Minnie Slauson wheat to Milwaukee at 1 cent; steamer Sanilac, schooners H. C. Winslow and Minnie Slauson, steamer Westover and barge Bliss for lumber Manistique to Chicago at \$1.00 per M feet; steamer John Otis lumber Menominee to Chicago at \$1.00.

THE LATE CAPT. BLACKBURN.

Word has been received of the death in Salt Lake City, Sunday, of Capt. Martin Blackburn, who, many years ago, was a well-known mariner on the great lakes. For years he was expert wrecking examiner for Beckwith & Fleming. After being burned out in the big fire he moved to North Evanston.

The death of Capt. Blackburn has recalled one of the largest wrecks that has ever occurred on the great lakes, in which two officers and a score of seamen lost their lives. It occurred in the fall of 1887. At that time Capt. Blackburn was with the Beckwith & Fleming Company and was sent with a crew and a steam pump on the tug Protection to bring the schooner Arab to Chicago. The Arab had been wrecked in a gale a few days previous off St. Joe. When Blackburn raised the wreck and started with it in

tow for Chicago a second storm came up and the old wreck began to founder.

The crew of the steam pump and Capt. Blackburn were on board the Arab and in an attempt to take them off before the schooner sunk the heavy hawser fouled the tug's propeller and she was disabled. While the seamen were being transferred Engineer William Kelly of the pump was washed overboard and drowned. Within a few minutes the dismantled hull went down, and left to herself the helpless tug rolled in the trough of the sea for two days. At the end of that time the tug was sighted by the steamer Ackley, which was in charge of Capt. James Stretch and he ordered a yawl lowered to bring aboard a tow line from the tug. It was intended to tow the Protection to Milwaukee, but after a day's struggle in the gale the Ackley was caught in the trough of the sea, and her smokestacks rolled off. She was then disabled, and after drifting nearly to the Michigan shore with the tug she also foundered and went down, taking with her a large part of the crew and Capt. Stretch.

When the Ackley was lost she nearly carried the tug with its crew of twenty men to the bottom. The Protection had been lashed to the steamer and when Capt. Stretch called through his trumpet that his boat was filling the wrecking company's men jumped to the side of the tug with axes and cut the hawsers. They were barely in time to save the little vessel for as the steamer went down they were drawn into the whirl and nearly foundered.

Through all the three days of rough drifting Capt. Blackburn and his men remained on the tug, existing on scant rations. In the course of the day the tug was sighted by the schooner Driver; an attempt, was made to take a tow line aboard, but the effort was fruitless. The Driver, however, succeeded in picking up the yawls from the Ackley and brought the men to Chicago. The Protection soon after went ashore near the life-saving station at South Haven, and her crew was safely landed by the life-saver after a life line had been shot out to the tug and the men hauled in by means of a breeches-buoy. An attempt was then made to save the tug, but she went down and remained in the water until the following spring, when she was raised by the Vessel Owners Towing Co. She is now among the Dunham Towing and Wrecking Co's tugs and still bears the name of Protection.

FLOTSAM, JETSAM AND LAGAN.

The application of W. G. Phelps, of Saugatuck, Mich., to be inspector of hulls at Grand Haven, Mich., was filed at the treasury department, Washington, on Tuesday.

The John Scott Russell sprung a leak after she loaded at Two Harbors and it was found necessary to put in some new strengthening work before she proceeded with her cargo of iron ore.

The report is current at Bay City that tugs have discovered the wreck of a schooner which has been sunk since 1861. The cargo of the vessel is said to have been copper, to the amount of 600 tons. The schooner was found off Charity Islands in Saginaw Bay.

The wreck of the Pewabic has been shattered by dynamite so that the cargo in the hold can be reached. A hoisting engine and other equipment have been raised. The work has so far been in the forward part of the ship, so the safe and baggage of passengers have not been seen as yet.

The steamer George G. Hadley has paid the \$5,000 salvage awarded recently to the owners, master and crew of the steamer Arabia, which picked the Hadley up on Lake Superior in a disabled condition November, 1894. Receipts were filed Tuesday in the United States court by the attorneys for the Arabia.

Capt. Johnson and the Erie life-saving crew rowed 15 miles on Sunday to aid an alleged sinking steamer. They found the steel canal boat Delta disabled from a broken cylinder head, and drifting with her tow. A second canal fleet came along shortly and towed the Delta and her barges to Erie. The disabled boat will be repaired at Cleveland.

Capt. John Irvine, who sailed the large Canadian schooner Minnedosa this season, died this week at his home in Kingston, Ont. He was one of the captains of the Kingston Transportation Company, and at one time was master of the Scotia. He had followed the lakes since he was 12 years old. He leaves three daughters and four sons.

The charter to carry 10,000,000 feet of lumber from Ashland points to Tonawanda has been taken by the Blodgett tows. The rate is not known, though other carriers bid as low as \$1.50. It is said that the barge is to insure her own cargo and pile the lumber three tiers back. This agreement is something new in lumber carrying and may form a precedent for other deals of the sort.

The steamer Crescent City this week broke all previous records of big cargoes on the lakes. She loaded at South Chicago an even 225,000 bushels of corn, amounting to 6,300 net tons. The largest cargo was taken out of South Chicago some weeks ago by the Amazon, and was 217,000 bushels of corn. Since that time she held the 6,000-ton record from Lake Superior, but it remained for the Crescent City to take 300 tons more.

The steamer Britannic, bound up the Welland Canal without cargo, carried away the lock gates of lock No. 6 on Monday night. Traffic will be suspended three or four days, while repairs are being made. A mistake in the signals from the captain to the engineer was the cause of the collision. The steamer was not damaged. There has been

more than the ordinary numbers of accidents in the Welland Canal so far this season.

Insurance agents are groaning every time Ballard's Reef in Detroit River is mentioned. They look for a new loss every half hour. One of them said recently that the present condition of things there was good for \$50,000 a week, and that a considerable part of it had been spent already. There is not a little talk of carelessness, and speculation over the wholesomeness of a commission to fix the blame of such accidents, but that is as far as it goes. The losses are paid all the same. It is to be hoped that the operations there will be finished at an early day. "Loading too deep," is the cry from the insurance officers.

It is reported that Toledo is to have a permanent naval academy of the highest grade for boys and young men. The school will open in October and next year it is expected to have a permanent home with buildings and grounds of its own. The school will be first class in every respect. No better place than Toledo could be found for such a venture and there is every reason to believe it will be a success. The promoter, J. G. Halaplian, A. M., has received sufficient encouragement to now announce the opening of the academy in October. We surmise that a nautical school is what is meant in the foregoing and not a full fledged naval academy. There is a wide difference between the two institutions, but we have got into the habit of carelessly slinging around technical and professional terms as to in many instances obscure the meaning intended to be conveyed.

PROPELLER SHAFTS.

Extract from a paper read at the International Congress of Naval Architects and Marine Engineers held in London, by Mr. G. W. Manuel, R. N. R., on the subject of "Crank and Propeller Shafts," as well as "Crank and Other Shafts Used in Mercantile Marine."

SHAFTS MADE OF IRON.—Iron is not less used, especially for crank shafts; steel is gradually taking its place in ocean-going steamers, except for propeller shafts. Iron shafts are, I may say, made up of thousands of small pieces of selected iron, generally termed scrap, cuttings of old iron boiler plates, good navy ship iron cuttings off forgings, old bolts, horse shoes, angle-iron, all welded together, forging into billets, reheated and rolled into bars, cut into lengths, and formed into slabs of suitable size for welding up into the shaft. Before the use of steel generally considerable improvement on the old method of faggoting, so-called, has been made more powerful forging hammers used, along with more powerful furnaces and fuel; still, with all this care, I may say there is not an iron shaft made without flaws or defects more or less, and when these flaws become placed during the construction of the shaft, in proximity to the greatest strain, and though there was no hot bearing (which no doubt would have made matters worse) they often extend until the shaft became unseaworthy, and, after all the best wrought iron that could be made of the finest scrap from the best qualities of selected brands, iron shafts are 60 per cent. inferior in strength to the best cast steel made on the Open Hearth system, cast into ingots, and forged down under the hydraulic hammer or press.

MILD STEEL-FORGED SHAFTS.—The term mild steel applied to shafts in a general manner does not in my experience represent the condition of the shaft, for I have found there are very great differences in the value and quality of mild steel, even as much as I have found in wrought iron, depending largely on the qualities of the iron used and the chemical and moulding operations of converting it into steel, and also the amount and description of mechanical work applied when being forged into shafts. Mild steel was first used by the P. & O. Co. in 1880; the dimensions of the shafts were limited by the same rules as those for wrought iron shafts. The steel was made by the best makers, having a tensile strength of 24 tons per square inch, it being then considered inadvisable to exceed this limit on account of former experiences with high tensile steel. The shafts made were crank shafts, and are still running, have been in use 17 years; up to the present date no flaws of any description have been seen. The engines have been tripled, using the same shafts and bearings, and the working power increased. The percentage above the Board of Trade and Lloyds rule which fixes the minimum size, is 24 per cent.; a percentage above must be allowed, and has been the experience of all ship owners varying from their record of mishaps and losses, and condemnation of shafts by the surveyors of the Board of Trade and Lloyds Registry. Since these shafts were first used the tensile strength of mild steel has been gradually increased, and we are now using it at 32 tons per square inch, possessing equal, if not more ductility and toughness, to endure even greater strains than formerly. This has been arrived at by continued improvement in the manufacture by the makers, so that the percentage allowed above the rules is now reduced to only 6 per cent., leaving a very slight margin. I mention this as there is an opinion that the reason some shafts are so free from mishaps is owing to their dimensions being so much above the rules that regulate those sizes instead of the superior quality of materials used. The table given shows the results of steel tests made from 1880 to the present, independent of that done by Board of Trade and Lloyds.

The Bethlehem Iron Co., S. Bethlehem, Pa., make a specialty of propeller shafts and their success in this par-

ticular kind of work is now universally known. J. H. Macalpine, Esq., associate member of the American Society of Naval Engineers, has a very valuable paper in the August quarterly on crank shafts, while the recent congress of naval architects and marine engineers held in London gave more than ordinary attention to the subject of crank and propeller shafts.

THE HALIFAX, N. S. DRY DOCK.

Never in the history of Halifax, Nova Scotia, was the arrival of a warship, British or foreign, awaited with such lively interest as was that of the United States battleship Indiana that arrived there on Saturday evening. For a week the press has been filled with descriptions of the battleship, often coupled with the solacing reflection that the country that owns this great ship has no dock in which to place her for repairs.

The citizens of Halifax apparently felt good when they saw the magnificent American engine of war steam slowly up the harbor and knock, as it were, at the door of the British admiralty authorities for permission to enter this drydock, the only one available, in fact, in order that repairs absolutely necessary might be made. Every day that the war vessel remains in the dock she pays into its coffers \$800.

The running up of the stars and stripes on the citadel shortly after 5 o'clock was the first signal. Then Admiral Sir James Erskine sent his launch to meet the visitors. At 7 o'clock the Indiana ran up the British ensign and saluted the port with 21 guns. The citadel returned the usual formal salute. Then the Union Jack was again hoisted upon the Indiana, and Capt. Taylor saluted the flag of Admiral Erskine with 15 guns, replied to by a similar salute from the warship Crescent. Then the American battleship let go her anchor at a point exactly opposite the frowning guns of the citadel.

The Halifax drydock is the property of a company. It cost \$1,000,000 to build, far more money than was necessary, but it is on a good financial basis on account of the subsidies it receives from the British government, the Dominion government and the city of Halifax, each of which contributes to it \$10,000 annually. It is on account of the Imperial and Dominion subsidies that the British Admiralty have a prior right to its use whenever they require it. The dock is 600 feet in length and the Indiana 348 feet.

TOLEDO STRAIGHT CHANNEL.

Colonel Jared A. Smith, Corps of Engineers U. S. A., has issued the following circular:

For convenience of vessel masters in determining speed through the straight channel at Toledo harbor, Ohio, the following information is issued:

At the regulation speed of eight miles per hour, which equals seven and one-half minutes per mile, the time allowance in passage is:

From Outer Can Buoys Nos. 1 and 2 to Main Crib, 3 miles, 22 1-2 minutes.

From Main Crib to Black Spar No. 21, 2 1-4 miles, 17 minutes.

From Black Spar No. 21 to Inner Red Can No. 30, 2 1-4 miles, 17 minutes.

Total, 56 1-2 minutes.

The above circular will be handed over on application at the Toledo Custom House.

UNCLAIMED LETTERS.

List of letters returned from Marine P. O., Detroit, and advertised August 13th, 1897:

Anderson, Theodore.	Polton, E. M.
Barrie, J. C.	Wilbows, Chas.
Douso, Frank.	Qualum, John,
Horup, Alex.	

JOHN J. ENRIGHT,
Postmaster.

THAT NEW TARIFF CLAUSE.

The matter of 10 per cent duty on goods that have heretofore been brought into this country under consular seal, is now in the hands of the United States Attorney-General. It is believed he will recommend that, owing to its construction, there will be no attempt by the department to enforce the new provisions.

American railroad managers have long sought to secure congressional action to deprive their Canadian competitors of the advantages they possessed, and especially since the enactment of the interstate commerce law. The Canadian railroads claimed they could give such rates as they desired, under the privileges of the consular sealing of their cars at the port of their transshipment.

If the opinion of Attorney-General McKenna shall give the effect to them that was intended by their insertion, the American railroads will, in the opinion of the treasury officials, have won their fight. The imposition of an additional 10 per cent duty upon all goods coming into this country over Canadian lines will far more than offset any advantage in rates those lines can possibly offer; and if the courts sustain this view of the law it is claimed the Canadian roads must necessarily retire from the international carrying trade.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., agents and ship brokers, New York, sends out the following in their weekly freight report for coast ports:

Business in charters for grain cargoes has continued active, and a number of large boats have been taken up for full cargoes of this article, mainly from Baltimore, but quite extensively too from New York, where engagements of parcel lots, offering for a variety of Continental markets, including some of the larger French ports, have enabled speculators to take up steamers under that restriction in opposition to increased freights demanded by the regular berth boats. The enquiry for medium-sized boats for Cork f. o. b. has been very much less active than during the preceding week, and rates have undergone a decided decline, especially for August tonnage. We quote today to Cork f. o. b. for August 3s 3d, September and later months 3s 4 1-2d@3s 6d, and for large boats to picked ports 3s@3s 1 1-2d as per port. For the privilege of part cargo general merchandise about 1 1-2d additional would probably have to be conceded. At the time of writing the great excitement latterly prevailing in our grain and freight market appears to have received a sudden check, which a very marked decline in the price of wheat has not been enabled to overcome. The demand for vessels outside of the grain business continues fairly active, and will doubtless assume large proportions as soon as the excitement latterly prevailing in grain subsides. The South Atlantic cotton ports are now in the market for some tonnage, September-October loading, and 35s to Liverpool-Bremen is likely to lead to charters; the demand from Gulf ports appears to be by no means pressing at the moment. The enquiry for timber boats from the Gulf ports continues, but the increased demands of owners, based on the excitement in grain freights, has for the moment stopped all further engagements.

The scarcity of sail tonnage, both on spot and to arrive, continues, and our market consequently remains very firm, at rates generally unchanged. In case of a pronounced demand for tonnage, we should undoubtedly see a marked upward turn in freights. Under these circumstances our subjoined list of charters is rather small and shows nothing of particular interest. Case oil freights to the far East are very firm, and tonnage to arrive, though far off, finds ready takers at full rates. The same may be said for general cargo vessels to the Colonies, but in other lines we find no decided change to report.

TACOMA COMMERCE.

Harbormaster Hoflin makes the following report of the ocean commerce at the port of Tacoma for the month of July:

IMPORTS.		Value.
Merchandise from China and Japan per N. P. S. S. Pelican.....		
Previously reported.....	\$ 98,241 00	4,603,511 62
Total imports seven months.....	\$4,701,752 62	
EXPORTS.		Value.
54,824 barrels flour.....	\$ 98,960 12	
8,085,738 feet lumber.....	83,326 75	
23,645 tons coal.....	76,477 50	
Miscellaneous merchandise to China and Japan.....	215,821 67	
Miscellaneous merch'dise to British Columbia.....	61,289 91	
Total.....	\$ 535,875 95	
Previously reported.....	2,724,133 14	
Total exports seven months.....	\$3,260,009 09	

Inward registered tonnage.....	33,249
Outward registered tonnage.....	38,180
Inward cargo tonnage.....	7,024
Outward cargo tonnage.....	49,690
Deep sea arrivals.....	30
Departures.....	29

"I thought it might be of interest to you to know," says Capt. J. C. Thompson in a letter to George L. McCurdy of Chicago, "that in coming down the North Channel to Round island from Iroquois July 26, at 9 p. m., the steamer Presley fetched up on a lump possibly 80 feet long with 15 1-2 and 16 feet of water over it and 18 feet around it, about 400 feet north-northeast from the black and red striped stake at the foot of the middle ground, while there were several boats passed 50 to 100 feet from us. The bottom appeared to be sand."

On August 14th a midnight wedding is to take place on board the whaleback passenger steamer Christopher Columbus while on her trip between Chicago and Milwaukee. The groom is an officer in the uniformed rank Knights of Pythias and the intended bride is Miss Bessie Johnson of this city.

Vice-Admiral Makaroff of the Russian Navy has started for the Arctic Ocean, north of Siberia, to try the experiment of keeping the sea open to navigation by means of ice breakers, which have been used with success on the Siberian rivers. The attempt is one result of Capt. Wiggins's endeavors to establish a commercial route by sea from western Europe to the Obi and Yenisei.

ROTARY VS. RECIPROCATING MARINE ENGINES.

The Relatively Advantages and disadvantages of Rotary and Reciprocating Engines as Applied to Ship Propulsion.

By the Hon. Charles Algernon Parsons, Member.
(Read at the Institution of Civil Engineers. Engineering Conference.)

The advantages of a rotary motor for the purpose of marine propulsion are manifest as regards a direct application of the force of the steam to the shaft to be driven, and a consequent saving of bulk, weight, friction and wear.

When such a motor is shown to be economical in steam consumption, and that the power delivered by the motor at a high speed of rotation can be economically transformed into thrust power by the screw propeller, and that the whole of the machinery is simple and easy to work, the position of the rotary motor becomes well established as a rival of the reciprocating engine, provided there are no drawbacks to detract from the advantages which it manifestly possesses. Up to the present no such drawbacks have shown themselves, or seem likely to do so.

The compound steam turbine consists of a series of steam turbines set one after the other on the same axis, so that each turbine takes steam from the preceding one and passes it on to the succeeding one. Each turbine of the set consists of a ring of fixed blades called guides fixed to the casing, and also of a ring of moving blades attached to the shaft. The steam from the steam pipe entering all round the shaft passes through the first set of guides, then through the first set of moving blades, then through the second set of guides, then through the second set of moving blades, and so on through the complete turbine motor.

Steam is, however, an expansive fluid, and though its action in each individual turbine is approximately as if the fluid was inelastic, yet a small increment of volume takes place at each passage through the blades, and the expansion going on at something like geometric ratio at each of the numerous successive turbines soon assumes large proportions. Ratios of expansion of fifty up to one hundred or even two hundred fold are common in one single compound turbine of the condensing type—a notable feature in turbine practice being that high expansion ratios and very large volumes can be economically dealt with without necessarily increasing the size and weight of the engine to any large extent, or what is perhaps more important and gives the turbine a special advantage over ordinary engines, is that practically no increase in frictional resistances is incurred by arranging for the extra expansion, and exceptional economy in steam is thereby realized.

The high speed of revolution diminishes not only the weight of the engines themselves in proportion to a given horse power, but also of the shafting, propellers and supports, as well as of the hull. The total weight of machinery in vessels of the torpedo boat or torpedo boat destroyer class on the turbine system, will probably not exceed one-third that of ordinary engines of the same power.

The consumption of steam on recent trials on the Turbinia has been shown not to exceed 14 1-2 pounds per indicated horse power at full load, or considerably less than that of similar engines of the reciprocating class, so that the size and weight of the boilers, and also the amount of coal carried, can be considerably reduced, and consequently the total displacement of the vessel to be propelled will be largely reduced, so that with a given horse power much greater speeds may be attained, or, on the other hand, heavier cargoes may be carried with a given consumption of coal per knot.

To these advantages must be added that the space occupied by the turbines is very much less than that occupied by ordinary engines, thus increasing the capacity of the vessel, and also that the turbine machinery being placed near the bottom of the vessel, the center of gravity is thereby lowered, and the stability of the vessel increased. Also, owing to their position (and even in the Turbinia with only three feet draught), they lie almost wholly below the water line—a matter of considerable importance in war vessels.

The almost total absence of vibration, owing to there being no reciprocating parts, admits of a diminution in the weight of the hull, and in fast vessels admits of a degree of comfort not hitherto attainable, and also in the

case of warships, enables guns and torpedoes to be worked with ease and accuracy.

Another feature is that owing to the reduced size and weight of the shafts and propellers, this not only facilitates duplication and repair, and enables spare parts to be carried on board the vessel to an extent not hitherto practicable, but also, owing to the smaller diameter of the propellers, it admits of screw-propelled vessels being used for navigating shallower waters.

To summarize, the merits of the turbine system applied to marine propulsion appear to be:

1. Greatly increased speed, owing to diminution of weight and smaller steam consumption.
2. Increased carrying power of vessel.
3. Increased economy in coal consumption.
4. Increased facilities for navigating shallow waters.
5. Increased stability of vessel.
6. Reduced weight of machinery.
7. Reduced cost of attendance on machinery.
8. Reduced size and weight of screw propellers and shafting.
9. Absence of vibration.
10. Lowered center of gravity of machinery, and reduced risk in time of war.

The first ship fitted with turbine engines has been the Turbinia. She is 100 feet in length, 9 feet beam, 3 feet draught amidships, and 44½ tons displacement. She has three screw shafts, each directly driven by a compound steam turbine of the parallel flow type. The three turbines are in series, and the steam is expanded at full power) from a pressure of 170 pounds absolute, at which it reaches the motor, to a pressure of 1 pound absolute, at which it is condensed. The shafts are slightly inclined, and each carries three screws, making nine in all. The screws have a diameter of 18 inches, and when running at full speed they make 2,200 revolutions per minute. Steam is supplied from a water tube boiler, and the draft is forced by a fan, mounted on a prolongation of the low pressure motor shaft, the advantage of this arrangement being that the draft is increased as the demand for steam increases, and also that the power to drive the fan is obtained directly from the main engines.

Up to the present, the maximum mean speed attained has been 32 3-4 knots, as the mean of two consecutive runs on the measured mile. These runs were made after about four hours steaming at other speeds, and the boat on the day of the trials had been 15 days in the water. It is anticipated that on subsequent trials, after some alterations to the steam pipe, still higher mean speeds will be obtained. As it stands, however, the indicated horse power realized is 2,100, and the consumption of feed water per indicated horse power hour, 14 1-2 pounds, and the speed the fastest of any vessel irrespective of size. The weight of the main engines is 3 tons 13 cwt. Total weight of machinery, including turbines and auxiliary engines, condenser and boiler, the propellers and shafts, the tanks and the water in boiler and hot well, 22 tons. Thus nearly 100 horse power is developed per ton of machinery, and nearly 50 horse power per ton of displacement of boat.

In the Turbinia, the stresses on the boiler and machinery are, as far as possible, according to Board of Trade rules, and the scantlings of the hull are heavy for a boat of her size and class.

It is believed that when boats of 200 feet in length and upwards are fitted with compound turbine motors, speeds of 35 to 40 knots may be easily obtained in vessels of the destroyer class, and it is also believed that the turbine will—in a lesser degree—enable higher speeds to be realized in all classes of passenger vessels.—From the Journal of the American Society of Naval Engineers, August quarterly number.

THE PROVIDENCE STEAM CAPSTANS.

The American Ship Windlass Co., of Providence; R. I., report great success in their capstan trade. During the first seven months of this year they have had considerable difficulty in getting capstans out fast enough to meet their orders. Notwithstanding this they have sold more capstans so far than they have sold in the same length of time in any year since the panic commenced, and, with only one or two exceptions, they have had the largest seven months' sales in capstans that they have had since they have been in business. Within the last two months they have sent thirty-four of these capstans into one state, and

that the next to the smallest state in the Union. To people who are familiar with the practical workings of capstans, and have used the "Providence" capstans, it is unnecessary to say a word in their favor, but to those who are not posted on this mechanical device the American Ship Windlass Co. say that although the "Providence" capstans are the best capstans in the world they are sold about as low as the poorest. Parties in want of a capstan have therefore every inducement to get the best. We also call attention to the fact that when needed the capstan is one of the most important parts of a vessel's equipment, therefore, none but the best should be carried.

LAKE SUPERIOR COMMERCE.

REPORT OF FREIGHT AND PASSENGER TRAFFIC TO AND FROM LAKE SUPERIOR FOR THE MONTH OF JULY, 1897, INCLUDING STATISTICS OF THE UNITED STATES AND CANADIAN CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO.

EASTBOUND.

ITEMS.	U. S. Canal.	Canad'n Canal.	Total.
Copper, net tons.....	19,327	1,107	20,434
Grain, bushels.....	2,285,580	561,100	2,846,680
Building stone, net tons.....	560		560
Flour, barrels.....	814,815	222,858	1,037,673
Iron ore, net tons.....	996,811	954,995	1,951,806
Iron, pig, net tons.....	3,466		3,466
Lumber, M. ft. B. M.....	120,567	209	120,776
Silver ore, net tons.....	5		5
Wheat, bushels.....	2,034,445	1,996,789	4,031,234
Unclassified freight, net tons...	41,374	8,686	50,060
Passengers.....	3,586	1,126	4,712

WESTBOUND.

ITEMS.	U. S. Canal.	Canad'n Canal.	Total.
Coal (hard) net tons.....	45,857	18,441	64,298
Coal (soft) net tons.....	142,991	53,484	196,475
Flour, barrels.....			
Grain, bushels.....			
Manufactured iron, net tons...	10,674	5,963	16,632
Salt, barrels.....	26,264	4,500	30,764
Unclassified freight, net tons...	39,249	20,094	59,343
Passengers.....	4,672	1,195	5,867

Eastbound freight, net tons..... 2,515,232
Westbound freight, net tons..... 341,535

Total 2,856,767

Total craft, United States..... 1,958
Total craft, Canadian..... 963

Total craft..... 2,921

Total registered tonnage, United States..... 2,031,632

Total registered tonnage, Canadian..... 815,974

Total registered tonnage..... 2,847,606

EQUIPMENT INSPECTION OF STEAMERS.

New York, Aug. 9th, 1897.

Editor of the Marine Record.

In your issue of the 5th inst. under the head of "Cleveland" it is said that the "Calumet" in charge of the boarding officers at Chicago was endeavoring to make a ripple among vessel owners by fining the Queen of the West \$1,500 for not having her name painted on the deck buckets.

I understand the Calumet to be a revenue cutter, and desire to ask for information, if it is not the duty of the steamboat inspectors to enforce the law in this matter. If so, where were they, and why do they so strictly enforce such paltry requirements and let others of greater import to the safety and welfare of the traveling public pass by unnoticed, particularly in the matter of life-saving appliances. Every one knows with what little care the inspection of vessels is generally conducted, and the captain and owners of the "Queen of the West" must indeed have been in very bad odor with the inspecting officer, to whom I think this duty belongs, when they were fined so heavily for the infringement of such a minor requirement. It is a well known fact that the inspectors do not enforce but overlook the requirements of the statutes in many cases when the safety of the traveling public is concerned, yet they revoke the licenses of captains and pilots and suspend them for the most trivial causes which they claim are a violation of the statutes. It would seem to the writer that the interpretation of the statutes ought to be more intelligently and consistently construed and administered.

JUSTICE.

TOWING SERVICES.

The sum of \$28,500 may be considered quite a steep figure for a tow of only five hundred miles, yet an English Admiralty Court has just awarded such a sum.

In giving judgment the court said: This is a salvage case of a meretorious character. It is a case in which the steamer Maine rescued and safely brought into Queenstown the North German Lloyd steamer Spree. The Maine was on a voyage from Philadelphia to London, and the Spree was on a voyage from New York to Bremen, and she had on board 281 passengers, 130 first-class, 67 second-class, and 84 third-class, and a crew of 235, making a total number of people on board of 516. Unfortunately the Spree had broken down, the breakage occurring in the after crank shaft, and according to a drawing handed in it appears to have been fractured right across, and of course she became impossible to navigate so far as her engines were concerned. She is a very large vessel, and had only pole masts, so that when she broke down she became practically helpless. This occurred on the 2d of July, and she was drifting about for three days, during which she saw two or three sailing vessels. One of them was asked to take a message reporting the Spree, and to get as soon as possible into the track of steamers, so that the distressed condition of the Spree should be made known in this country as soon as possible. Accordingly the sailing vessel did communicate with the steamer, and on the night of the 7th of July news reached Scilly, and communication from there was telegraphed to the owners of the Spree, so that on the 8th they were able to consider the desirability of sending out assistance. But before that was done the report came in that the Spree was in tow of the Maine, and therefore it was unnecessary to take any steps for salvage services. On the 5th of July the Maine found the Spree. During the time the Spree was broke down she seems to have been drifting to the S. and E., the effect of which was that when picked up she was considerably to the south of the track of the Atlantic steamers, about 50 miles we are told to the south of it, and it was owing to the fact that the Maine was out of her track and much to the S. of it that the Spree was fortunate enough to have the services of the Maine. The captain of the Maine has told us that owing to uncertain observations he found himself really more to the S. of the track than he intended to be, and in consequence of that fact he fell in with the Spree 50 miles to the S. of where he himself would wish to have been. It is unnecessary to go into the details, and it is sufficient to say that at that time the Spree was in an absolutely helpless condition and must have been towed in order to produce safety to her and those on board. An officer was sent from the Spree in a boat, and according to the evidence of the captain of the Maine—and I see no reason to doubt it—he was told by this officer that his captain wished the captain of the Maine to put up a signal “will tow you to Queenstown” as the passengers were excited, and this would allay their excitement. I have no doubt that that was the state of things, and that the passengers and everybody else were extremely glad to find a steamer alongside and ready to assist them. The weather was fairly fine throughout the whole of the towage which lasted till the 9th, when they got into Queenstown. There was apparently not very much wind at any time; it got to a fresh breeze as she approached the coast, and there was a swell on. The only other material matter is that on the 8th when the vessels were about six miles to the south of Fastnet, and were approaching the time when they would get up to Queenstown, the master of the Spree suggested that one of the towing hawsers, which had been made fast should be slipped in order that he might make his anchor fast to the cable to which that hawser had been fast. I understand he had two hawse pipes, one on each side, and cables led out at each of these hawse pipes and made fast, and therefore in order to come to an anchor when they got into Queenstown it was necessary to unfasten the towing gear of one of the cables, and replace the anchor upon it. The captain of the Maine did not quite agree with this, and thought it would have been better to have been done when close up to Queenstown. He might have been right about that, because it turned out, though every care was taken to get the vessels under weigh again with one hawser only towing, that owing to the large size of the Spree compared with the Maine the hawser parted after three hours or so, and the Spree was entirely adrift. Some discussion has taken place as to whether or not during that

time there was any really serious danger because of her drifting. After examining this with the assistance of the Elder Brethren, it seems to me that the Spree was drifting more or less along the coast, and though it cannot be said there was no increase of risk because of the accident, yet we think there ought to have been no serious difficulty at the time in remaking fast. It was one of those incidents which increased the risk, but I do not think to the very large extent pleaded by the plaintiffs. The vessel was brought safely into Queenstown, and expenses and damages were incurred and sustained amounting altogether to £250. Of course the Maine was delayed by the difference between the time at which she would have arrived at a similar position if she had gone on her ordinary course, and had gone straight to London instead of going to Queenstown. It is quite obvious the Spree was out of the track of ships, and but for this fortunate falling in with the Maine she might have been kept out there very much longer. But she was a tight ship, and was not in any risk at that time of the year from the weather, and there is this mitigating circumstance that owing to the communication made by the sailing ship to the steamer assistance could have been sent, and probably would have been sent if it had not been reported she was in tow and being brought home. At the same time it is quite obvious that assistance could not have reached her for some time afterwards, and they would have to find her, and it would depend on how soon she found her and the state of the weather then whether assistance could easily be rendered. In the meantime it would be by no means a pleasant state of things for the passengers and others on board that large steamer. I have no doubt it is greatly to the advantage of a liner such as this to have their passengers brought in as quickly as possible. The longer and more arduous a time they spend on board the less favorable are the passengers and the less likely they are to appreciate that line, and it is to the interest of the owners therefore that they should be rescued promptly. The risk to the plaintiffs' vessel has been indicated in the pleadings, and undoubtedly there was some risk of collision between these large vessels in making fast, and undoubtedly at the time when the Maine was endeavoring to make fast at the Fastnet there was some danger of their fouling their propellers, and on one occasion the master of the Maine said that the hawser got right under the bottom of the Maine. Having regard to the whole facts of this case, I think the award should be £5,700.

The total distance towed was 500 miles. The value of the Maine is £20,000, of her cargo £30,373, and of her freight £2,912 9s 2d. The total value of the Spree, her cargo and freight, was £85,000.

NOTICE TO MARINERS.

Treasury Department,
Office of the Light-House Board,
Washington, D. C., Aug. 6, 1897.

SAGINAW RIVER RANGE LIGHT STATION.

Notice is hereby given that, on or about August 16, 1897, the color of the front and rear light towers at this station, at the mouth of the Saginaw River, westerly side of Lake Huron, will be changed to white in each case. The color of the front tower is now red and of the rear tower yellow (buff).

CLEVELAND EAST BREAKWATER (WEST END) LIGHT STATION.

Notice is hereby given that, on or about August 20, 1897, the intensity of the fixed red light marking the west end of Cleveland East Breakwater, entrance to Cleveland Harbor, will be increased by changing from a tubular to a lens lantern, and the location of the light will be slightly changed by establishing it in the structure recently erected adjacent to the mast from which the present light is shown.

The height of the focal plane of the light will be increased to 35 feet above mean lake level. The light will illuminate the entire horizon and will be visible from all points of approach excepting from the southwestward, where it will be obscured by the buildings of Cleveland West Breakwater (East end) Light Station.

The new structure is a square, reddish brown, pyramidal, open framework, surmounted by an inclosed white section, with vertical sides, and an octagonal lantern.

By order of the Light-House Board.

W. S. SCHLEY,
Captain, U. S. Navy, Chairman.

LAUNCH OF THE STARRUCCA.

The steamer Starrucca, launched at the yards of the Union Dry Dock, Thursday, Aug. 5th, is a steel spar-deck steamer with water bottom 54 inches deep. Her main hold is divided into nine compartments with substantially constructed bulkheads of steel.

Her dimensions are: Length over all, 346 feet 10 inches, molded length spar deck 343 feet, length keel 325 feet, depth 28 feet, beam 44 feet. Sheer on spar deck 4 feet forward, 2 feet 6 inches aft. Sheer on gunwale 5 feet 3 inches forward, 3 feet aft.

Her decks, main, spar and top-gallant fore-castle, are entirely of steel with no wood sheathing.

Another new feature of this boat is her spars, two in number, which are made of steel plate in three courses, riveted with steel rivets. These spars are 100 feet long 24 inches diameter at deck tapered to 6 inches at truck.

This boat is built with channel floors and zee bar frames above tank and great care has been exercised in determining on size and weight of material used in the construction, the result being an unusually strong steamship.

For handling water ballast she is equipped with two vertical duplex pumps, 8-14-16, manufactured by the Deane Steam Pump Co., of Holyoke, Mass., and a single system of piping with a 10-inch main and 6-inch suction in each compartment, all valves being operated from the deck.

The engines were built by the King Iron Works and are of the vertical inverted triple expansion type, with three cranks and with cylinders 22 by 38 1-2 by 64 diameter and 42-inch stroke and are up to date in every particular.

The boilers, four in number, were built by the Lake Erie Boiler Works, of Buffalo, two of them being 11 feet 6 inches diameter and 13 feet long and two 11 feet 6 inches diameter by 12 feet long, with two furnaces built in each, all four boilers to carry a steam pressure of 175 pounds.

She is equipped between decks with a double cylinder vertical hoisting engine with cylinder 10 by 12 with line shafting operating double drums for all hatches. She is also fitted with steam capstan and steam windlass manufactured by the Providence Ship Windlass Co., Providence, R. I., and two Dunn Stockless anchors, manufactured by the Standard Steel Casting Co., of Thurlow, Pa.

The steam steering gear is of the latest pattern, manufactured by Williamson Bros., of Philadelphia, Pa. This with the electric light machinery is placed in the main engine room, so that it will be entirely under the control of the chief engineer.

The electric light plant consists of two Westinghouse dynamos, each 5 3-4, K. W., 125 volts, direct connected to two Westinghouse Junior engines, 6x5 cylinders. The installation of the entire plant has been done by the Union Dry Dock Co.

The crews quarters are located on the spar deck, the deck houses being of wood with steel coamings of sufficient size to give ample room for all the crew, heated throughout by steam and lighted by electricity.

It is expected that this boat will carry 4,150 tons on 16 feet water and at this draft she has a displacement of 5,610 tons and it is expected she will have no difficulty in making a run of 14 miles per hour.

The keel of this boat was laid February 16th, and is now practically ready for sea, all her machinery being in place and connected up, her spars are stepped and the greater part of her outfit aboard so that it is intended to take her to the coal dock to load Monday morning.

The boat has given employment almost constantly to 500 men during her construction and will be operated by the Erie Railroad Co., Union Steamboat Line.

Under the title of “Quarantine Methods,” Dr. Alvah H. Doty, Health Officer of the port of New York, writes most entertainingly in the August number of the North American Review. No subject of importance is perhaps less understood than that of quarantine, and Dr. Doty graphically describes the work at the station, the process of disinfecting ships, crew and passengers, and asserts that in no other part of the world are stations better equipped than in the United States, the needs of the service better appreciated, and the obstruction to commerce less.



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CLEVELAND, O., AUGUST 12, 1897.

Flint & Co., managers of the Pacific Coast Clipper Lines from New York and Philadelphia informs the Record that they pay their masters a bonus of \$10 for every day under 131 in which the passage is made from New York to San Francisco. The consignees of this line in "Frisco" are Messrs. J. F. Chapman & Co., and owners as well as consignees are of our best citizens.

There has been much talk relative to the American Steel Barge Company building a new dry dock at the head of the lakes, or distinctly at West Superior, Wis. The company has not yet come to a definite conclusion in regard to the building of a new dock. It is a fact, however, that they are doing some work but it is only in the character of testing ground for a future location of a dry dock if such is required in the near future.

A novel, if somewhat primitive method of issuing sailing directions has been started on the lakes. First, a certain rate of speed is made compulsory, then the distance between two points or objects is given and finally the time to be consumed in traveling or steaming between the several points or bearings is printed so that those who run may read. Measured mile tests and correcting compass courses are thus furnished the generally overworked lake pilot.

Geo. Tunell, of Chicago, has been appointed to supervise a new bureau of the treasury department. He will collect statistics of commerce on the lakes, including the reports from all ports, the kind of freight carried and facts about navigation. The data will be published in the report of the bureau of statistics and continued regularly thereafter. Later, the office will be removed to Washington. Mr. Tunell has made a study of the lakes, and is well equipped to conduct the work of gathering statistics under the auspices of the government.

Canada has begun to take means to enforce the alien labor laws against Americans. Commissioner McCreary this week informed the Canadian Pacific authorities that any American laborers engaged for railroad work would be deported to their own country again. The Commissioner has instructions from the Canadian government to strictly enforce the new law. This is exactly what might have been expected from the paltry and ill advised measures taken at some of the lake ports and it is quite within the bounds of possibility that the next step the Dominion authorities will take is to debar American sailors from shipping on any of their vessels where or when Canadians are obtainable.

PASSING SIGNALS IN FOG.

It is possible that after a few years lake pilots may be thoroughly conversant with the clauses of the sailing and steering rules contained in the so-called White bill.

This week we find a master in one of the largest ship-owning firms on the lakes grumbling because steamers in a fog and not visible to each other would not reply to his passing signal; he further suggests that rewards be offered to crews who will give information of such negligence as will lead to the conviction, etc. Now, we can but consider that this master either feels his position too acutely, is desirous of being a leader in the profession, or lacks good judgment.

One of the local inspectors of steamboats—the men who examine for competency and issue licenses to masters and pilots—states that passing signals are not allowed unless the vessels sight each other, and in so stating calls this old and experienced shipmaster down for not understanding properly the new rules regarding sailing and steering.

Of course, there is and will be a wide difference of opinion relative to the judgment of both parties. We have already heard an ex-local inspector holding that the shipmaster was perfectly correct in rushing into print so as to expose his brother shipmasters in their dereliction of duty. On the other hand, a local inspector says they acted quite right and in accordance with the provisions of the White bill.

The proper way for the complaining party would have been to submit all facts in the case to the head of the steamboat inspection department before making accusations of wrongdoing. Perhaps he was the guilty party himself. Certainly it looks rather poor judgment to maintain course and speed while giving passing signals to unseen vessels, especially when ignorant of the course and bearing of such objects.

The master of a Cunard Trans-Atlantic mail and passenger steamer recently reported that on making the English channel during a dense fog no less than seventeen fog whistles were reported as blowing in the immediate vicinity of his ship, yet nothing was in sight. In such a case the signal to one would be liable to be misconstrued by sixteen others and of course it was impossible to convey any signification to the entire seventeen relative to the course which he intended to pursue relative to each, he being the passing ship in the majority of instances owing to having a ship of the highest speed. At least, so much may be assumed.

We have strongly advocated the thorough examination of all pilots in the provisions of the White bill, every clause of which should be committed to memory by each person in charge of the deck of a boat. This particular branch of an examination for competency to take charge of the deck of a boat should occupy a couple of hours, at least, instead of the few minutes now devoted to the trial of knowledge regarding the clauses contained in the new sailing and steering rules.

These laws, which are in force on American vessels trading on the lakes, are, if anything, more complicated and inclusive than the international sailing and steering rules, because local laws are tacked on to the former international code. In this instance it may be that complicated is not the best term to use, rather, that the rules cover all possible positions and localities in which vessels can be placed; hence, the inclusiveness of the code, a full and distinct knowledge of which is imperatively necessary for the successful and safe conduct of all lake vessels under the American flag.

A communication relative to the location of the new life saving station at Port Huron has been received by the Record this week, but, as the writer has omitted giving his name and address we are unable to print the letter. While accepting any nom-de-plume in the publication of correspondence, we still insist upon being furnished with the name and address of the writer thereof, not necessary for publication, etc., but as a protection and evidence of good faith.

Relative to gas buoys, we have had red gas buoys, black gas buoys, and this week we have "yellow gas, resembling the mast-head lights of steamers." There is no occasion for the use of such inaccurate terms. The gas buoys all show a bright light. It would seem that government department officials are responsible for introducing

these terms on the lakes, but they should not be adopted. It is just possible to ridicule such phraseology out of existence before it takes too general and firm a hold on vesselmen.

It was noted in the Record of August 5, page 5, that the St. Lawrence River passenger steamers, America and Algerian had been in collision. It appears that the former boat while being known as belonging to the American Line to distinguish her from the Richelieu & Ontario Line of boats, is sailing under the Canadian flag. We said in our previous article that the Dominion authorities would inquire closely into the causes which led up to the casualty in so far as the Algerian was concerned. It is now learned that as both vessels are under the Dominion flag the inquiry will cover the action or inaction of the America as well.

Polar exploration has received a new impetus by reason of the consideration given to the expeditions of Peary, Nansen, Andree and others. While attempts to discover the North Pole have been numerous, very little attention has been paid to the South Pole. But on Sunday next the steamer Belgic will leave Antwerp with a party of scientists and others who propose to see what can be done in the direction of Antarctic exploration. The expedition is under the patronage of the Belgian government and large appropriations have been made to pay the necessary expenses. This expedition will serve to considerably increase the world's stock of knowledge about the geography and climate of the Antarctic regions.

TARIFF AMENDMENTS.

The new tariff amends the enclosed two general provisions of the law relating to shipping as indicated:

Sec. 14. That all articles of foreign or domestic production needed and actually withdrawn from bonded warehouses and bonded manufacturing warehouses for supplies (not including equipment) of vessels of the United States engaged in foreign trade, or in trade between the Atlantic and Pacific ports of the United States, may be so withdrawn from said bonded warehouses, free of duty or of internal revenue tax, as the case may be, under such regulations as the Secretary of the Treasury may prescribe; but no such articles shall be landed at any port of the United States.

Sec. 22. That a discriminating duty of ten per centum ad valorem, in addition to the duties imposed by law, shall be levied, collected, and paid on all goods, wares, or merchandise which shall be imported in vessels not of the United States, or which being the production or manufacture of any foreign country not contiguous to the United States, shall come into the United States from such contiguous country; but this discriminating duty shall not apply to goods, wares, or merchandise which shall be imported in vessels not of the United States, entitled at the time of such importation of the same duties as shall then be payable on goods, wares, and merchandise imported in vessels of the United States, nor to such foreign products or manufactures as shall be imported from such contiguous countries in the usual course of strictly retail trade.

NORTH ATLANTIC PILOT CHART.

The remarkable drift of a whistling buoy is recorded by the chart of the North Atlantic Ocean, issued on Aug. 2, by the Hydrographic office at Washington. Just one year ago this buoy broke from its moorings off Martha's Vineyard and started on its long journey south, and since that time it has been twice reported in its drift of over four thousand miles. In February last it was seen 100 miles due east of Bermuda, where it struck a southwesterly current that sent it toward the Haytien coast, and on July 7, when last reported, it was rapidly making its way toward this island. Unless it strikes the Gulf stream and is swung around and north again, it will probably next be heard from at some of the islands of the Windward group.

The same chart shows that the ocean is now unusually clear of dangerous derelicts, and the neighborhood of Hatteras and the Jersey shore, where several are generally drifting about, has now only four, and these are well out of the way of coastwise commerce. In the lane of transatlantic travel there are three small ones, but the drift is southerly, and soon they will be no longer dangerous to steamships.

HARBORS SILTING UP.

It has long been evident that the piers, jetties, wharves, breakwaters and other constructions or obstructions on the lake front—noticeably at some of the principal lake ports—have been placed with a view to having the silt carried in suspension after a gale of wind deposited in places where it has no right to be. We perhaps should not say that such was the view at the time of building these constructions, but owing to a lack of attention to the currents and other local conditions, such as the prevailing direction of winds, etc., such has been the effect.

It may easily be understood that piers and breakwaters cannot, or should not, be run out in all cases at right angles to the harbor. The conditions at each port should determine the angle, method of construction and distance which it is advisable to run out piers. The Milwaukee Journal seems to have caught the ideas correctly in its issue of Monday last, wherein it is stated that the harbor is filling up with sand. The Journal goes on further to state that—

"The ceaseless forces of nature are now at work piling up trouble for the city of Milwaukee. That is to say, the ceaseless forces of nature may bring about a condition of things sometime which, combined with the ever present greed of man, will throw the city into a mess of trouble.

"Chicago is now in the throes of an immense law suit which was brought about in the same way. For years and years and decade after decade, the waves of old Lake Michigan kept adding land to the Illinois shore until a large strip appeared where there had been none before. It was used as it was made. Little by little, men pushed out into the lake and took up every inch of land that appeared, until some one thought to look up the deeds to the property and found that it had never been officially claimed and that it belonged to nobody. They made claim for it from the government and thus the big fight began. It has been running through the courts for years and will continue to vex lawyers and judges for many years to come. It has entered politics and has caused many charges and countercharges and has bred more trouble already than the land is worth, although it is situated in a most valuable part of the city of Chicago.

So now is nature working here. Little by little, land is being added to the coast north of the government breakwater, and when it becomes valuable enough to fight over, it too will become the subject of bitter litigation, in all probability. To be sure, all precautions have been made to ensure the land to the city, but some time some one will get careless and allow one little point to go by unnoticed and leave an opening into which some one else will pry the wedge of the law and by blows of energy and capital will shatter the precautions and lay the matter open for a fight.

It was about fifteen years ago that the government breakwater was started. It was built a little way from the shore to allow a current to pass between it and the land, so that the water in the harbor would not become stale. It was soon found, however, that that was a mistake. Sand washed in through the orifice and was rapidly filling up the harbor. In the course of a few decades, the entire space between the harbor piers and the breakwater would be a sandy beach if left alone. The government authorities saw this and last fall closed up the opening and built the pier from the land.

"It is still found that the sand flows around the end of the pier and is gradually making a beach along the breakwater. In time this will have to be dredged out in order to keep the harbor of sufficient depth. This can readily be seen from the way in which the little slip where the boat house is located, has been filled up. Last spring it was found that it was so shallow that even row boats could not get to the dock without scraping the sand. It was dredged out and kept clear during last summer, but this spring it was again filled with sand, worse than last year. So much sand washed in that the slip was entirely filled and had formed a dry beach. The veteran boatman gave up in despair and now allows the sand to have its own way.

"But the real growth of land is going on north of the pier. There several acres have been acquired—enough to afford land to make a park and erect a club house upon, besides the city pumping works. And it is growing rapidly. In time, if let alone, it will extend out to the end of the pier and the artificial harbor which is now such a beautiful scene will become ten times more beautiful by

being natural. The land may become covered with grass and trees and flower beds and winding walks. Of course, this is far in the future, but it will surely come to pass some time unless changed by artificial means.

"The city has acquired the property just north of the foot of the pier. The deeds are perfect as far as can be learned now, but no one can tell what flaw in them may be found some time. Those made lands will be very valuable. The natural grasping qualities inherent in the human race will find some claim to them and then the fight is on. It will not be in this day and generation, nor probably in the next, but it is very probable that it will come some time.

"The cause of the increment to the shore line of the western side of Lake Michigan is a current of sand which constantly flows to the south along this side of the lake. It is caused and kept up by the northeast storms. They stir up the sand on the shore and then edge it down further and further to the south. When an obstruction is put in the way of this current, the sand settles. More and more comes down from the north and adds on to that which has already settled, it grows into land and vegetation comes and makes the land fertile and ready for man to take possession."

LLOYD'S QUARTERLY RETURNS.

From the returns compiled by Lloyd's Register of Shipping, it appears that, excluding warships, there were 435 vessels of 871,661 tons gross under construction in the United Kingdom at the close of the quarter ended 30th June, 1897. The particulars of the vessels in question are as follows, similar details being given for the corresponding period in 1896 for the purpose of comparison.

DESCRIPTION.	30th June, 1897.	
	No.	Gross Tonnage.
STEAM.		
Steel	343	850,869
Iron	50	8,205
Wood and Composite	3	209
Total	396	859,283
SAIL.		
Steel	11	9,768
Iron	1	226
Wood and Composite	27	2,384
Total	39	12,378
Total Steam and Sail	435	871,661

DESCRIPTION.	30th June, 1896.	
	No.	Gross Tonnage.
STEAM.		
Steel	313	741,313
Iron	27	4,026
Wood and Composite	2	150
Total	342	745,489
SAIL.		
Steel	29	25,964
Iron	1	226
Wood and Composite	22	2,333
Total	52	28,523
Total Steam and Sail	394	774,012

The present returns exceed those for last quarter by 43,000 tons, and are the highest which have been received since December, 1869. Of the vessels under construction in the United Kingdom at the end of June, 381 of 725,041 tons are under the supervision of the Surveyors of Lloyd's Register with a view to classification by this Society. In addition, 32 vessels of 70,441 tons are building abroad with a view to classification. The total building at the present time under the supervision of Lloyd's Register is, thus, 413 vessels of 795,482 tons.

LAKE FREIGHTS.

Chicago corn rates to Buffalo dropped back to 1½ cents after a few cargoes had been placed at 1½ cents.

Ore rates are still the same, although it is reported that Escanaba to Lake Erie went up to 45 cents on a couple of cargoes. The going rate is 50 cents from the head of Lake Superior or Marquette and 40 cents from Escanaba.

Coal is nearly at a standstill, owing to the miners' strike, but shipments will be very brisk when the mines work up to their usual output again.

THE CENTRAL PASSENGER ASSOCIATION.

The Central Passenger Association is a combination of the managers of lake and railroad passenger lines of traffic.

It is reported that at the last monthly meeting of the association at Chicago a resolution was passed requiring steamboat lines to make their rates conform to the all-rail rates to competing points.

This resolution was pointed particularly, it is said, at the Lake Michigan & Lake Superior Transportation Co., the Goodrich Transportation Co., the Cleveland & Buffalo Transportation Co., the Detroit & Cleveland Navigation Co., and the Graham & Morton Transportation Co.

The effect of enforcing this rule would be in every instance to make a prohibitory raise in lake passenger tariffs. The D. & C. line would have to raise the fare to Cleveland to \$4.50, and charge \$7 to Buffalo, or \$12 for the round trip. The present rates by water are 50 cents by day and \$1 by night to Cleveland, and \$2.50 from Cleveland to Buffalo, making \$3 to \$3.50 for the fare one way. To Mackinac the rail rate is \$8.68, round trip \$11.60; by water, \$3.50 and \$6 by the D. & C., and \$4 and \$7 by the Northern Steamship Co.

It is now stated that the general passenger agents of the steamboat lines will get together and have some more unreasonable terms suggested. The railroads make all kinds of rates for excursions, picnics, meetings of organizations, etc., and it would seem to be folly to force a war with the passenger steamboat lines.

DUNKIRK HARBOR IMPROVEMENTS.

The Chief of Engineers has approved the recommendation of Maj. Symons, Corps of Engineers, U. S. Army, for deepening the channel in Dunkirk harbor to nineteen feet and the inner harbor to an eighteen-foot depth instead of dredging only to the depth specified in the contract let last May to E. J. Hingston. This additional improvement will cost about \$60,000 which will be paid for from the balance of the \$408,000 Government appropriation of about \$89,000 left after the payment of original contract price \$319,000 is subtracted. This change in plan is greatly for benefit of navigation interests.

AN AMATEUR NAVAL RESERVE.

The New York Maritime Register very rightly states an opinion on the Naval Reserve as follows:

"A great deal of praise is being meted out to the Naval Militias just now. These organizations are being lauded in speeches and addresses as the safeguard of the navy, the naval reserve that is to be the reserve of safety in case of war. There can be no objection to all this, if it were not that the necessity of having a real naval reserve is lost sight of meanwhile. The Naval Militia is a good thing and its establishment and support will be of advantage, but from its peculiar make up and training it can never be more than a coast guard. It is in no sense a naval reserve, and all the talk about forming a reserve, of men for manning our war ships by giving landsmen two weeks training each year on a cruiser is the veriest gush. By all means let the Naval Reserve be maintained and improved, but at the same time, no efforts should be spared to organize and support that great need of our Navy—a good naval reserve of seamen."

TREATY RIGHTS.

There may be some truth in the following item taken from a lake daily:

"The United States is building up quite a reputation for violating, evading and infringing on treaties instead of amending them. This is done by act of congress, which body seems to take no cognizance of treaties until some foreign government protests and then it may notice the complaint or not. The latest is a clause put in the Dingley bill placing a discriminative duty of 10 per cent on goods imported from abroad through the Dominion of Canada under bond. This practice is legal under the treaty of 1879 and the interstate commerce commission have always regarded it in its decisions. A treaty is the supreme law of the land, in the terms of the constitution, yet Congress goes on and levies this duty in violation of it to force freight at additional cost over our railroads, which naturally and cheaply comes part way over Canadian roads. It will affect mostly goods over the Canadian Pacific and is in favor of the Northern Pacific. The fact that such importations have been sanctioned by a treaty is totally ignored. This disregard of treaties is very noticeable in the last and the present Congress. It is a new form of reckless legislation."

H. C. BURRELL,

Marine Reporter.

We can Supply Men and Officers to Passing Vessels

BOAT ON THE RIVER
AT ALL HOURS,
NIGHT OR DAY.Signal: One long
two short.Our boats are
white. We'll treat
you white and deal
with you

ON THE SQUARE.

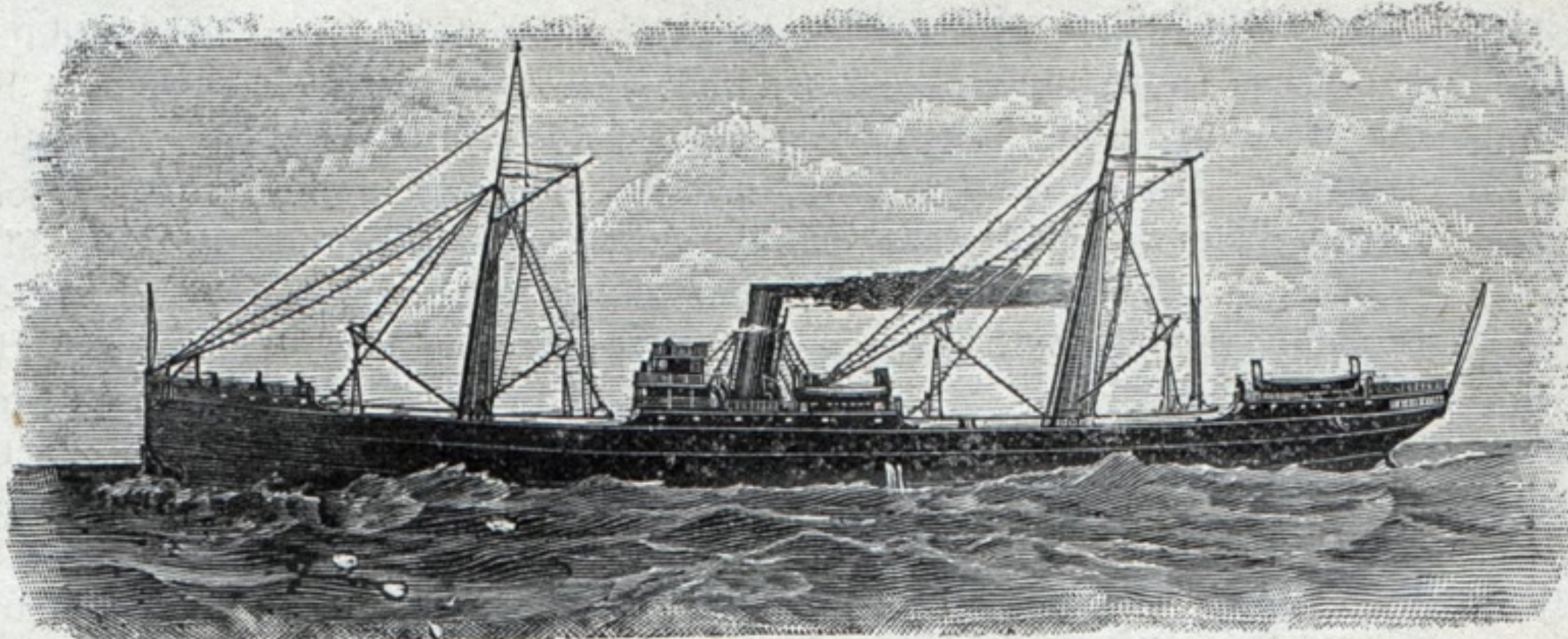
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DETROIT, MICH.**F. W. WHEELER & COMPANY,**

BUILDERS OF ALL KINDS OF

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MARINE ENGINES.

DETROIT, MICH.

SAILORSFrequently find the need of a cheap Watch.
"CHEAP" in price, not in quality. The
want is fully met in our**\$1.50 New American Watch. \$1.50.**

To have offered a guaranteed watch for \$1.50 a few years ago would have only caused a scoffing public, but the marvelous progress in mechanics together with our enormous output have made it possible, and we are now proud to introduce to the readers of this journal our "NEW AMERICAN." This is no cheap, trashy affair. The case is of solid, yellow metal, equal in appearance to gold, and will not change color. The movement is the regular American lever, has second hand, patented escapement, 240 beats per minute, and a guaranteed reliable time keeper. The most wonderful of modern productions in quality and price. Sent on receipt of \$1.50. Your money back if you are not perfectly satisfied. We refer by permission to THE MARINE RECORD

THE N. A. WATCH MFG. CO., Cleveland, O.

HONEST JOHN.MR. JOHN H. DEMING,
GENERAL SUPERINTENDENT PEERLESS
RUBBER MANUFACTURING CO.**RAINBOW PACKING.**THERE IS NO OTHER "JUST AS GOOD."
WHY? Because no one else knows how to make it.**HE INVENTED IT.**Thousands
of Imitators.
No Equal.**Will hold
Highest
Pressure.**

THE COLOR OF RAINBOW PACKING IS RED.

**Don't have to use Wire and Cloth to hold Rainbow.
Rainbow won't Blow Out.****TREASURY DECISIONS RELATING TO
VESSELS.**

The per diem charges of Government inspectors for overtime in discharging vessels are properly computed upon the basis that the working days of a vessel (29 U. S. Stat., 115) are to run from the date of the entry of the vessel, and not from the day of designating the final port of discharge. (27 U. S. Stat., 41).

Before the U. S. General Appraisers at New York, July 13, 1897.

In the matter of the protest, 15624 f-9482, of W. G. Dowling against the decision of the collector of customs at New York as to the rate and amount of duties chargeable on certain merchandise imported per M. E. Dean, and entered July 25, 1896.

Opinion by Somerville, General Appraiser.

The protest in this case is directed against a charge of \$20, exacted of the master of the vessel Margaret E. Dean, for five days services for the supervision of a United States inspector held by the collector to be beyond the time allowed by law for the discharge of the vessel. The amount is based on an allowance of \$4 per day, and the time is computed from the date of the entry of the vessel.

The protestant claims that the time allowed for discharging the cargo should have been estimated from the date of designating the final port of discharge under the act of Congress approved June 3, 1892 (27 U. S. Stat., 41) amendatory of sections 2881 and 2807, of the Revised Statutes. (Synopsis 12871, citing this amendment.)

The collector computed the time from the entry of the vessel (which was under 500 tons burden), in accordance with article 125, Treasury Regulations, 1892, as amended by Department circular No. 72 (May 12, 1896), Synopsis 17108, which provides, among other things, as follows:

"The working days of a vessel are to be computed by excluding the date of entry, legal holidays, and stormy days, when discharge is impracticable with safety to cargo."

The above-amended regulation was adopted to conform to the act of Congress approved May 9, 1896, which extended the time for unloading vessels, and amendatory of said section 2880 of the Revised Statutes. (29 U. S.

Stat., chap. 164, p. 165; cited in Treasury Synopsis 17108.)

We are of the opinion that the working days specified in this act, and allowed for unloading, should be construed to run from the date of the vessels entry, as decided by the collector, and as construed in the department regulations. This is in accordance with established customs practice, as stated in the report of the collector.

The protest is overruled accordingly, and the collectors decision affirmed.

A vessel enrolled and licensed for the coasting and foreign trade on the northern frontier (Rev. Stat., Sec. 4318-19), which clears at an American port, touches at an intermediate Canadian port, and thence immediately enters at an American port of destination (both American ports being in the same collection district) is liable to pay the fee for entry provided in section 4382, Revised Statutes, for vessels direct from a foreign port.

Before the U. S. General Appraisers at New York, July 13, 1897.

In the matter of the protest, 31298 b, of Capt. J. W. Hatch, against the decision of the collector of customs at Ogdensburg, N. Y., as to the rate and amount of duties chargeable on certain vessel-entrance fee, imported per Cresco, and entered August 20, 1896.

Opinion by Somerville, General Appraiser.

It is provided by section 4382 of the United State Revised Statutes that—

"The following fees shall be levied and collected from the owners and masters of vessels navigating the waters of the northern, northwestern and northeastern frontier of the United States, otherwise than by sea: * * *

"Twelfth: For the entry of a vessel direct from a foreign port, fifty cents. * * *

"Fourteenth: Vessels departing to or arriving from a port in one district to or from a port in an adjoining district, and touching at intermediate foreign ports, are exempted from the payment of entry fees."

The original statutes, condensed in said section 4382, are found in 1 U. S. Stat. L., chap. 85, Sec. VII, p. 176, and the amendatory act in 16 U. S. Stat., sec. 11, p. 595.

The collector of customs at the port of Ogdensburg,

N. Y., exacted a fee of 50 cents for the entry of the vessel Cresco, which is a small screw steamer of less than 37 tons burden, net, duly enrolled and licensed, for the coasting and foreign trade on the northern frontier under the provisions of sections 4318 and 4319 of the United States Revised Statutes. It is claimed that this charge is unauthorized by law.

The collector, in his report to the board, makes the following statement of facts, which we find to be true, in the absence of any effort on the part of the appellant to deny or controvert them.

"The regular employment of said steamer is the transporting of passengers and freight between the ports of Waddington and Ogdensburg, in the collection district of Oswegatchie."

"On the 20th day of August, 1896, the Cresco left Waddington on her usual trip to Ogdensburg, and touched at the Canadian port of Cardinal, where she took on one passenger without baggage and proceeded to her destination."

"Following the precedent long established in this district, I required said Cresco to enter as if direct from a foreign port, and exacted therefore the fee of 50 cents."

The question for decision is, whether the vessel is to be regarded as coming "direct from a foreign port" within the meaning of the twelfth paragraph of said section 4382, above quoted. Did she enter direct from the Canadian port of Cardinal by reason of touching at that port and taking on a passenger without baggage? The vessel cleared from Waddington and entered at Ogdensburg, both of which are American ports, but are situated in the same collection district. It is manifest that if these ports were in adjoining districts the fee for entry would be remitted by the express terms of the fourteenth paragraph of section 4382, cited above.

While we can see no reason why this distinction was made by Congress, it is the letter of the statute, and we cannot undertake to except the present case from its operation on any supposed reasons of equity or justice. An examination of all the paragraphs or section 4382 would seem to justify the view that a vessel clearing from one American port and touching at a foreign port, and proceeding thence to another American port, where entrance

is made, comes directly from such foreign port. This construction is emphasized by the exception made in paragraph 12 of said section, and by the explanatory phrase occurring in paragraphs 8 and 9 relating to charges for manifest fees "whether touching at foreign ports or not." The protest taking objection to the charge in question is overruled, and the collector's decision affirmed.

SHIPBUILDING IN THE UNITED STATES.

Regarding shipbuilding in the United States, Engineering, London, has the following to say: Much has been written of the progress of shipbuilding in the United States, but the official statistics do not offer any suggestion of such a resuscitation in the industry as we were led to anticipate. The total number of vessels launched during the year ending on the 30th of June last year was 729, but they only made up a tonnage of 177,643 tons; whereas in the previous year the tonnage was 203,976, so that there is a decrease of some 26,000 tons. The significance of the total is the better appreciated when it is noted that it is not equal to half the output last year of the Clyde, and even falls short of the Wear as well as of the Tyne. The total for the United Kingdom is nearly eight times that for the whole of the United States, and even if we include only merchant steamers in this country, the production is still more than six times that of the States. It is interesting further to note that while in Britain the sailing ship tonnage is equal to only 1 for every 86 of steamers, the proportion in the States is about 1 of sail to 2 of steam tonnage. This is due to the large number of small wooden craft built, principally in the western rivers. Thus there were 673 wooden boats, whose average measurement is under 100 tons. The only large steel sailing ships built were constructed in the lake yards. These numbered 11, and averaged about 3,000 tons each; and at the lakes also 15 steamers, of an average of 3,722 tons, were built, while on the Atlantic and Gulf coasts there were three iron steamers, totalling 1,819 tons, and 25 steel steamers of 19,769 tons. In point of fact it may almost be said that the deep-sea vessels did not exceed

100,000 tons in all, while of these 85 per cent. were constructed on the shores of the great lakes for use on the lakes, so that the States is yet a long way from participating in the construction of the world's over-sea shipping. Builders on the lakes contributed in all 102,150 tons out of the total of 177,643 tons, while the builders on the Atlantic and Gulf constructed 55,666 tons, and those on the Pacific 9,360 tons, and the remaining 10,000 tons were constructed on the western rivers.

VISIBLE SUPPLY OF GRAIN

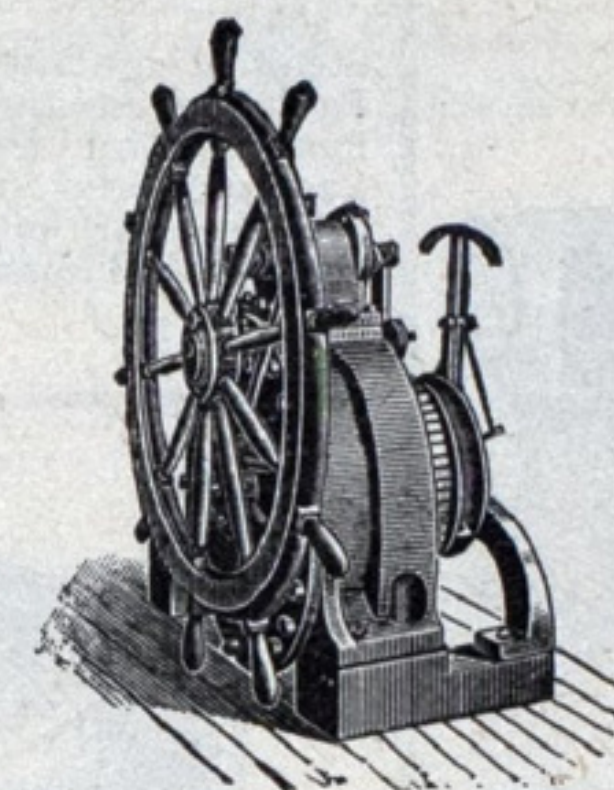
As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Albany.....		25,000	35,000		
Baltimore.....	1,332,000	633,000	83,000	52,000	
Boston.....	87,000	940,000	19,000		
Buffalo.....	622,000	1,112,000	726,000	51,000	215,000
" afloat.....					
Chicago.....	3,225,000	8,858,000	1,882,000	223,000	10,000
" afloat.....					
Cincinnati.....		4,000	8,000		2,000
Detroit.....	79,000	12,000	12,000	30,000	13,000
" afloat.....					
Duluth and Superior.....	1,015,000	81,000	281,000	384,000	282,000
" afloat.....					
Indianapolis.....	275,000	45,000	3,000		
Kansas City.....	131,000	184,000	118,000	6,000	
Milwaukee.....	43,000	15,000	13,000	44,000	75,000
" afloat.....					
Minneapolis.....	6,482,000	37,000	160,000	1,000	6,000
Montreal.....	234,000	78,000	484,000	28,000	34,000
New York.....	705,000	1,210,000	1,113,000	497,000	59,000
" afloat.....	7,000				
Oswego.....		61,000	17,000		33,000
Peoria.....		9,000	25,000		
Philadelphia.....	186,000	605,000	76,000		
St. Louis.....	349,000	71,000	16,000	6,000	
" afloat.....	83,000				
Toledo.....					
" afloat.....	630,000	320,000	91,000	100,000	
Toronto.....	38,000		18,000		3,000
On Canal.....	125,000	542,000	137,000	117,000	69,000
On Lakes.....	1,950,000	1,661,000	1,224,000	69,000	30,000
On Mississippi.....	52,000	8,000	10,000	24,000	
Grand Total.....	17,650,000	16,511,000	6,551,000	1,632,000	831,000
Corresponding Date, 1896.....	46,129,000	12,188,000	6,915,000	1,626,000	639,000

GAS VS. ELECTRIC LIGHTED BUOYS.

Gay buoys have been adopted on the lakes within the past season or two, but we have not yet got to electric lighted buoys and it would appear as if the lake marine need not attempt to try the experiment, for according to the New York Marine Journal it is stated that our neighbors, the Pilot Commissioners, are sometimes twice a month notified that the electric lighted buoys in Gedney's Channel are out. In fact these buoys are becoming a nuisance on that account although the Light-House Board is doing its best to keep them going. Some unknown power cuts off the current and this important channel is left in darkness. It is the consensus of opinion that these electric lighted buoys should be discontinued and the old reliable Pintsch gas buoys be put in their places. The first cost may be a little more, but in the end it will be much less and the danger to shipping reduced. No one ever heard of a Pintsch gas lighted buoy going out when properly cared for, and there is no danger of that occurring as efficiently as the Light-House Department is at present administered. We notice that the lighthouse tender Arbutus is at the present time at work placing four Pintsch gas buoys in the Galveston channel. The Galveston pilots can feel sure that they will have lights as long as they have gas and if they don't have gas it is because the port of Galveston does not pay its gas bill.

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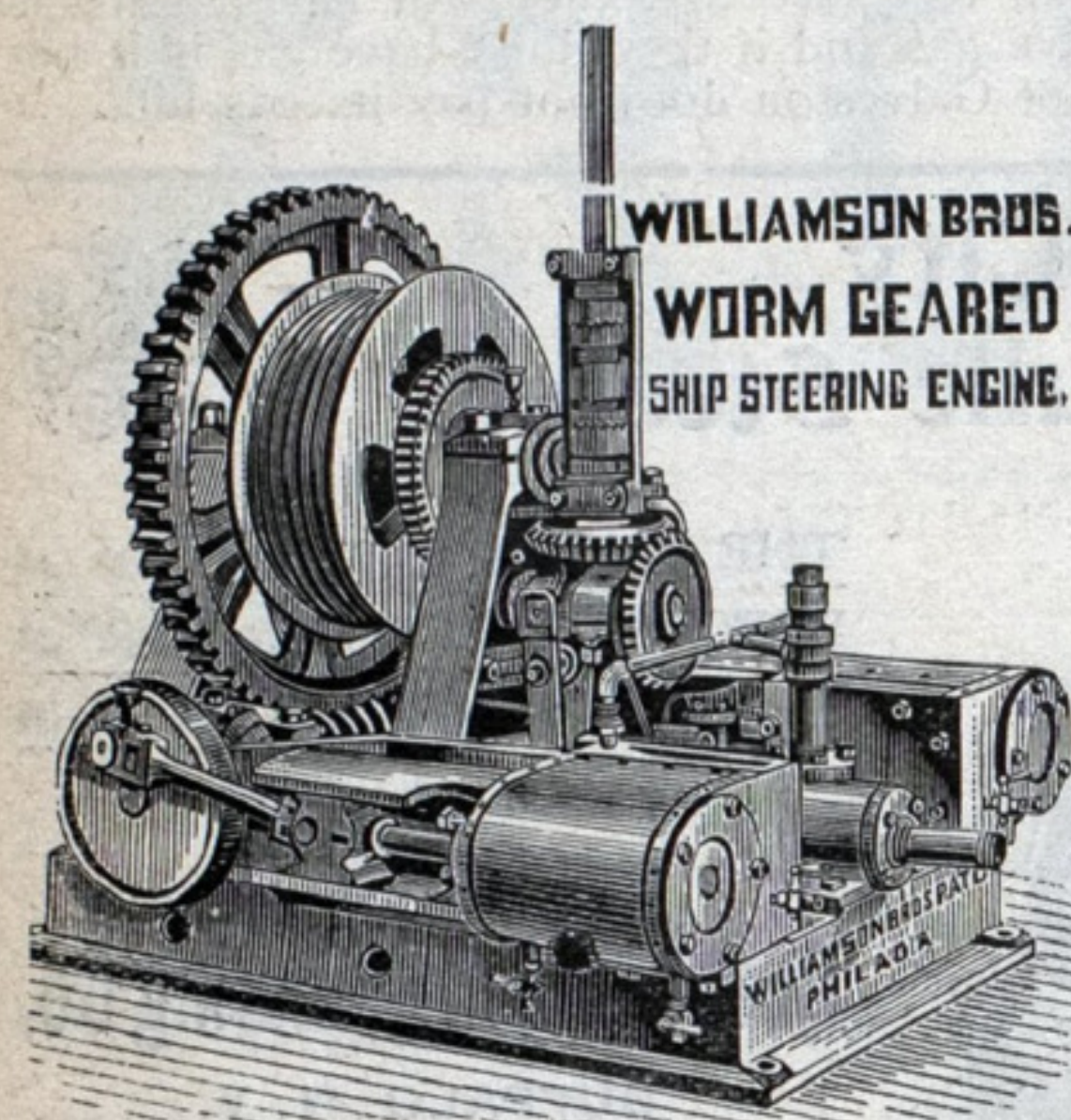
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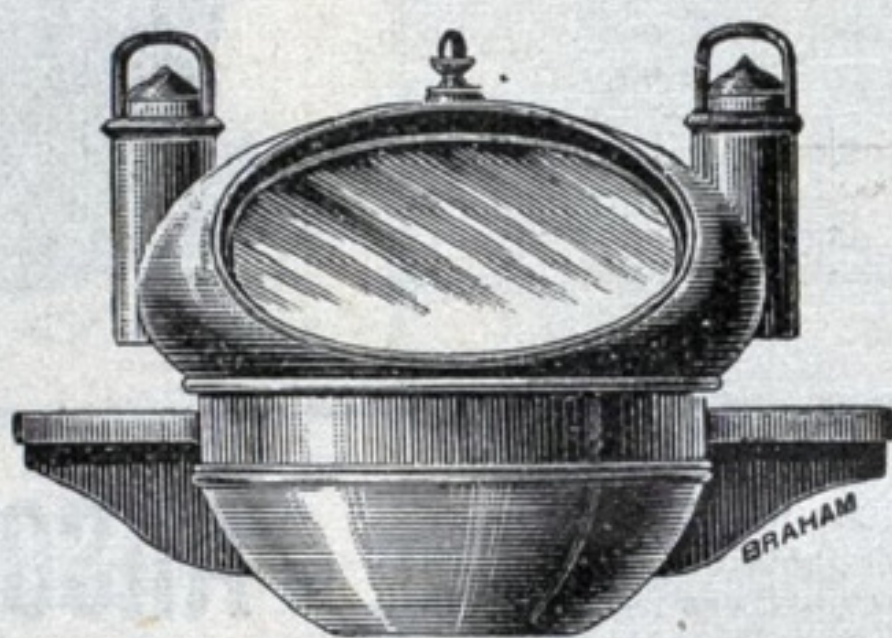
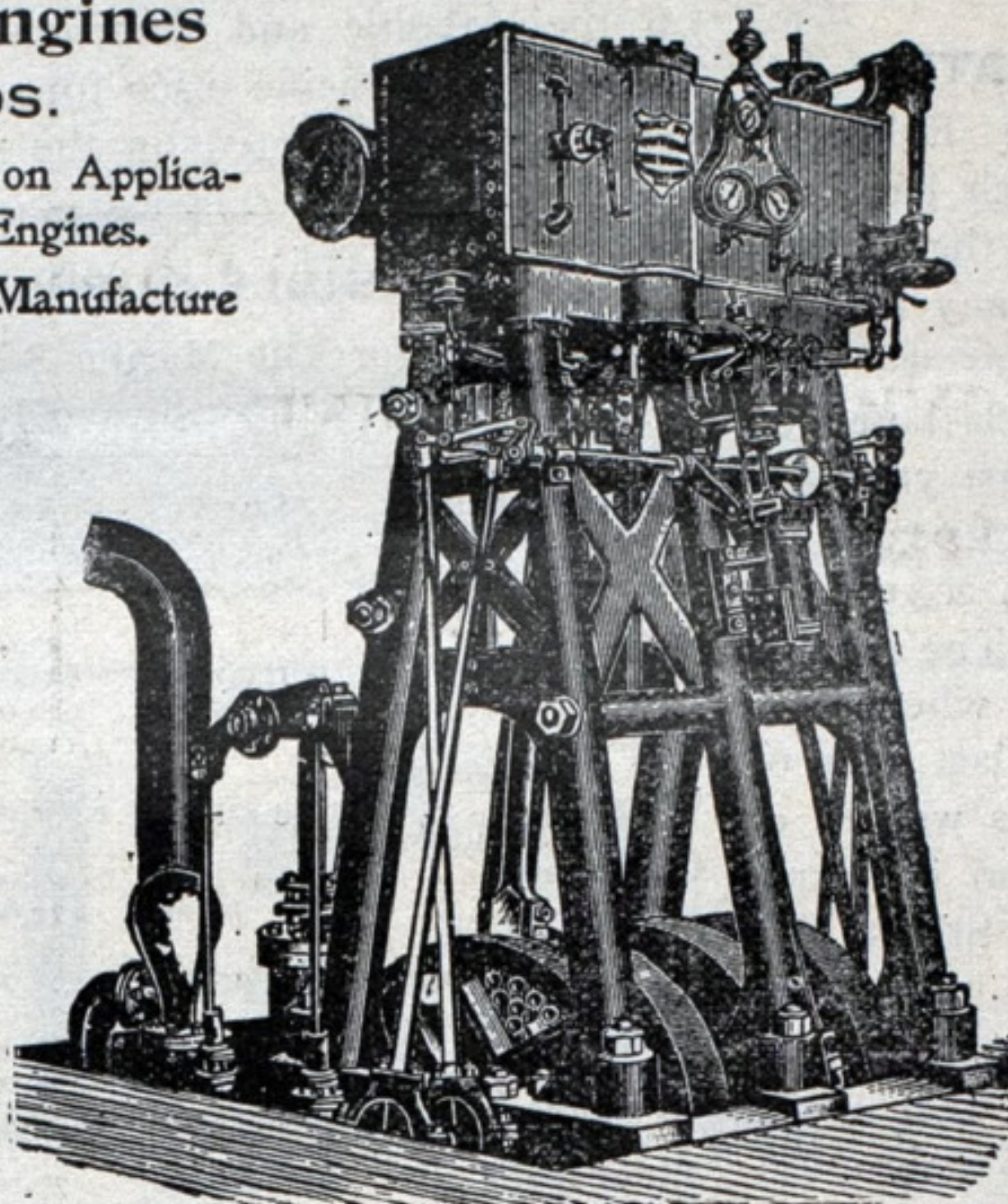
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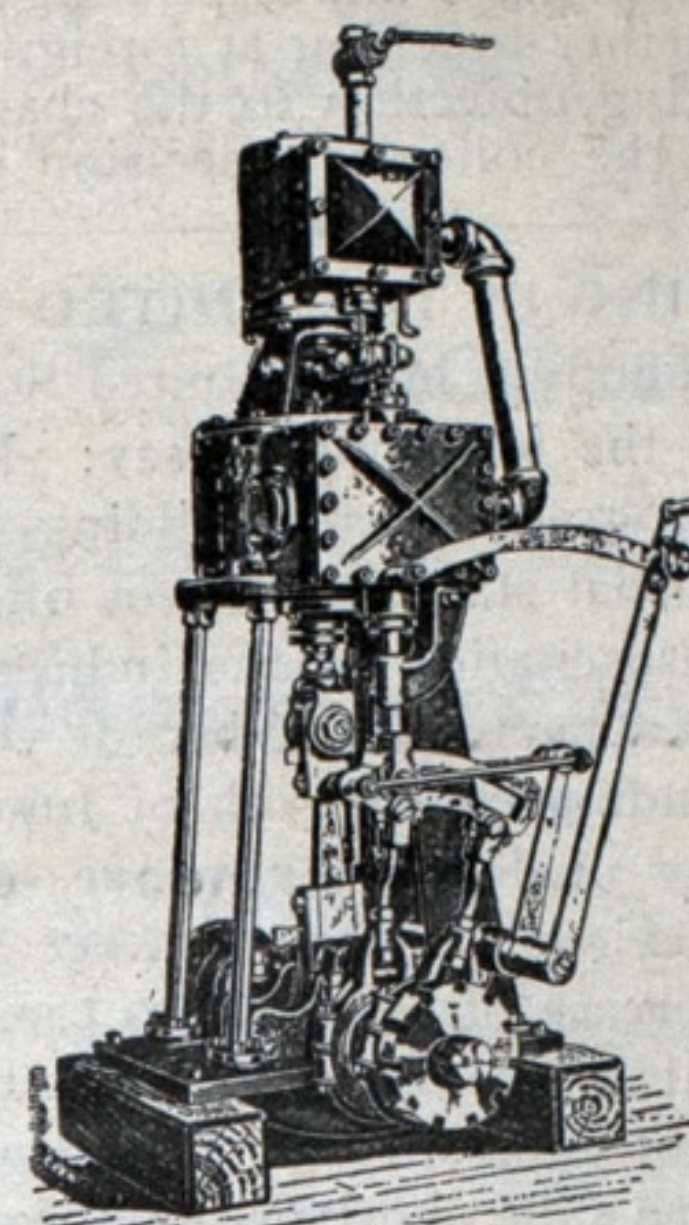
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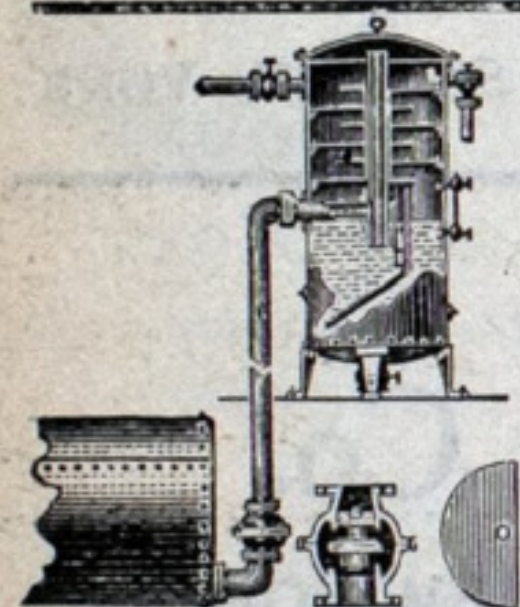
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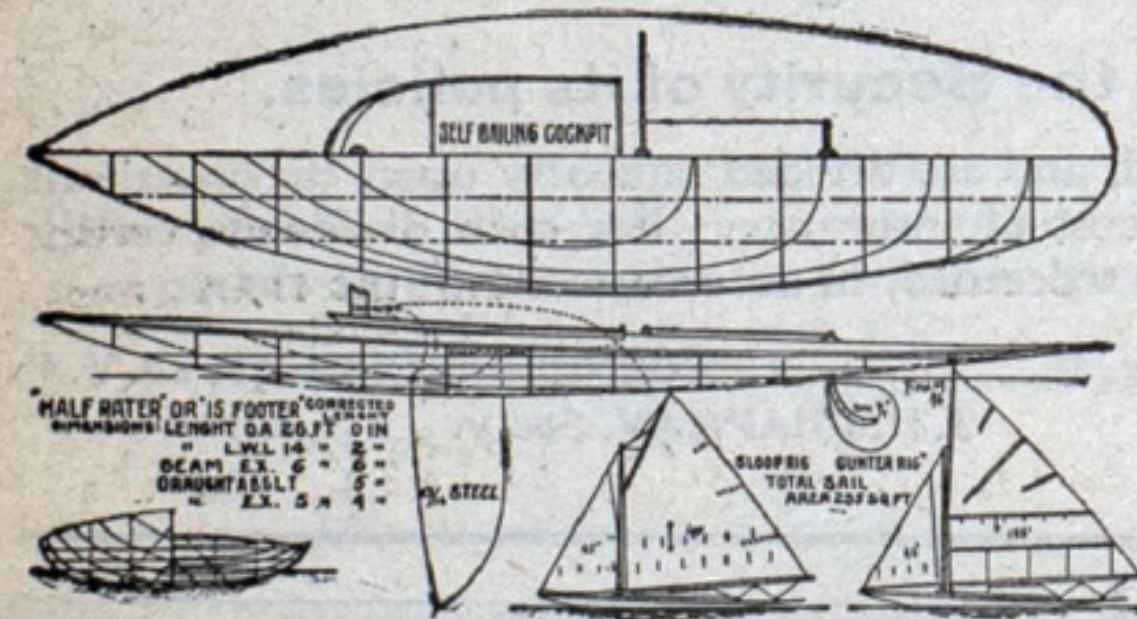
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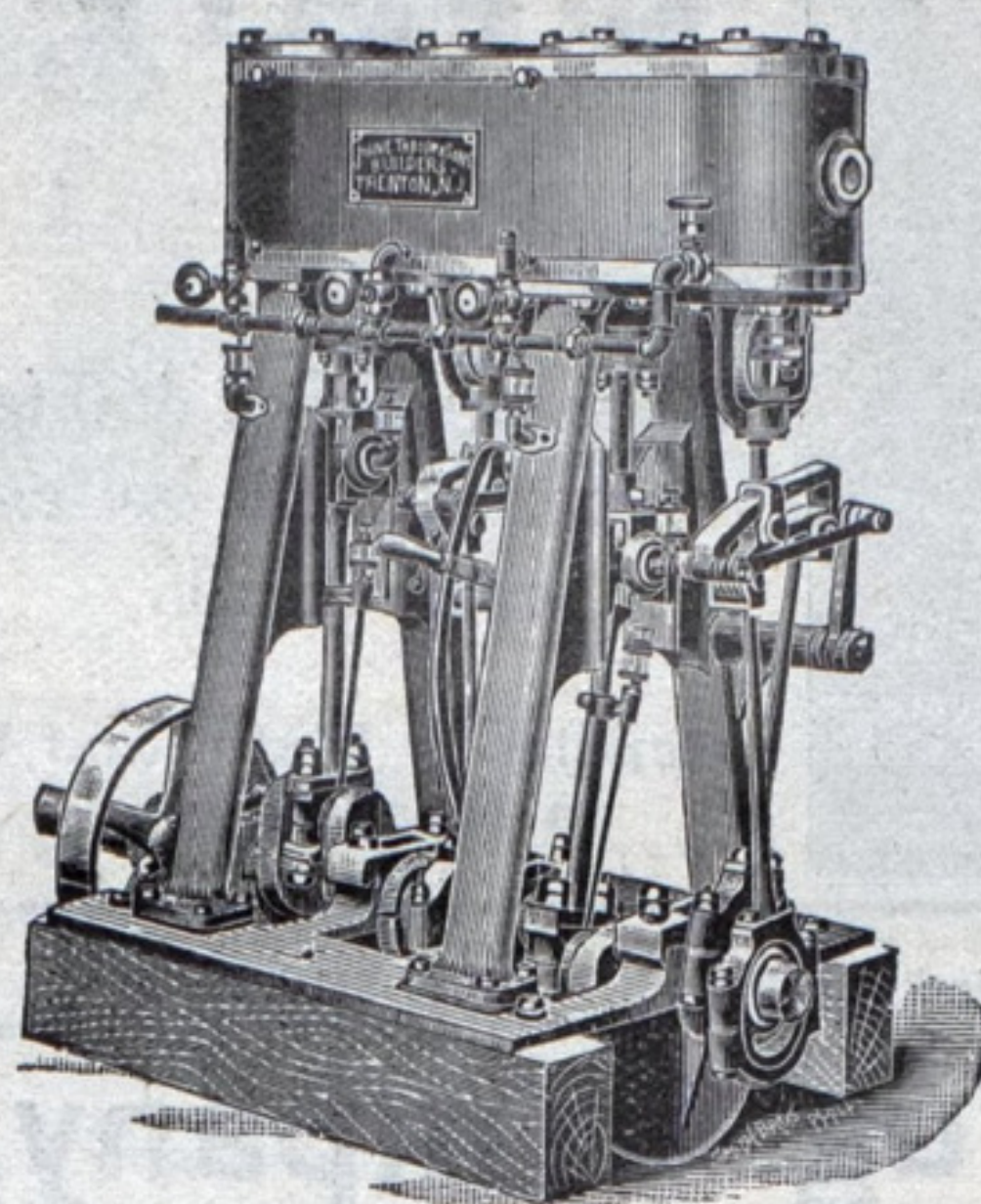
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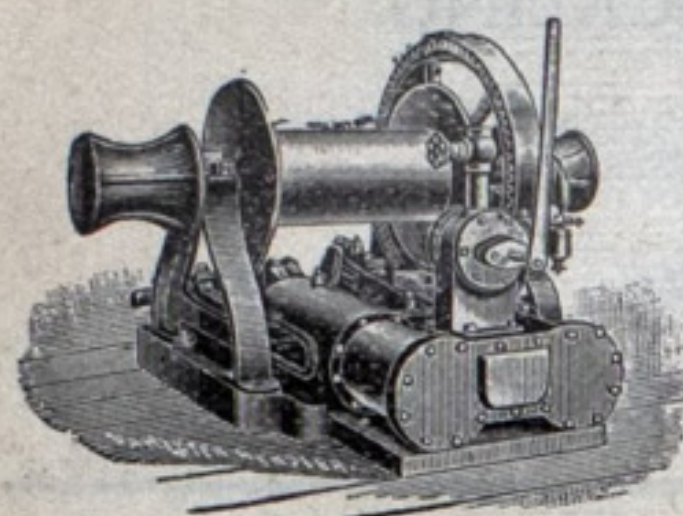
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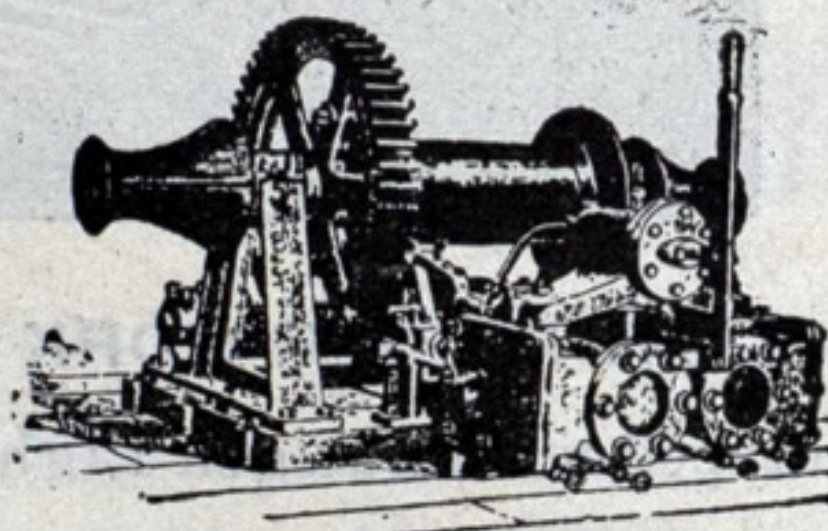
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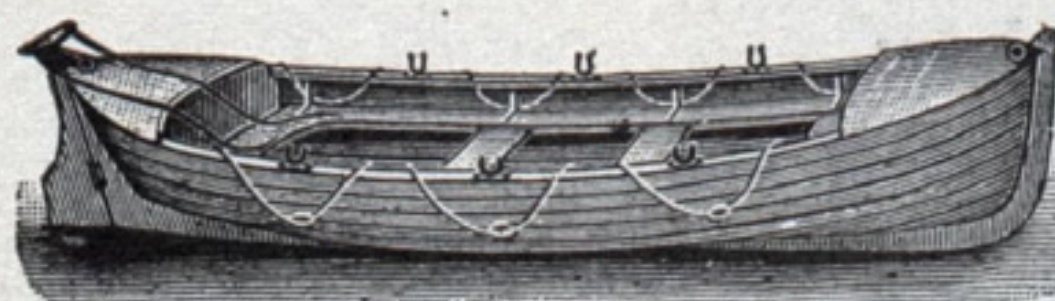
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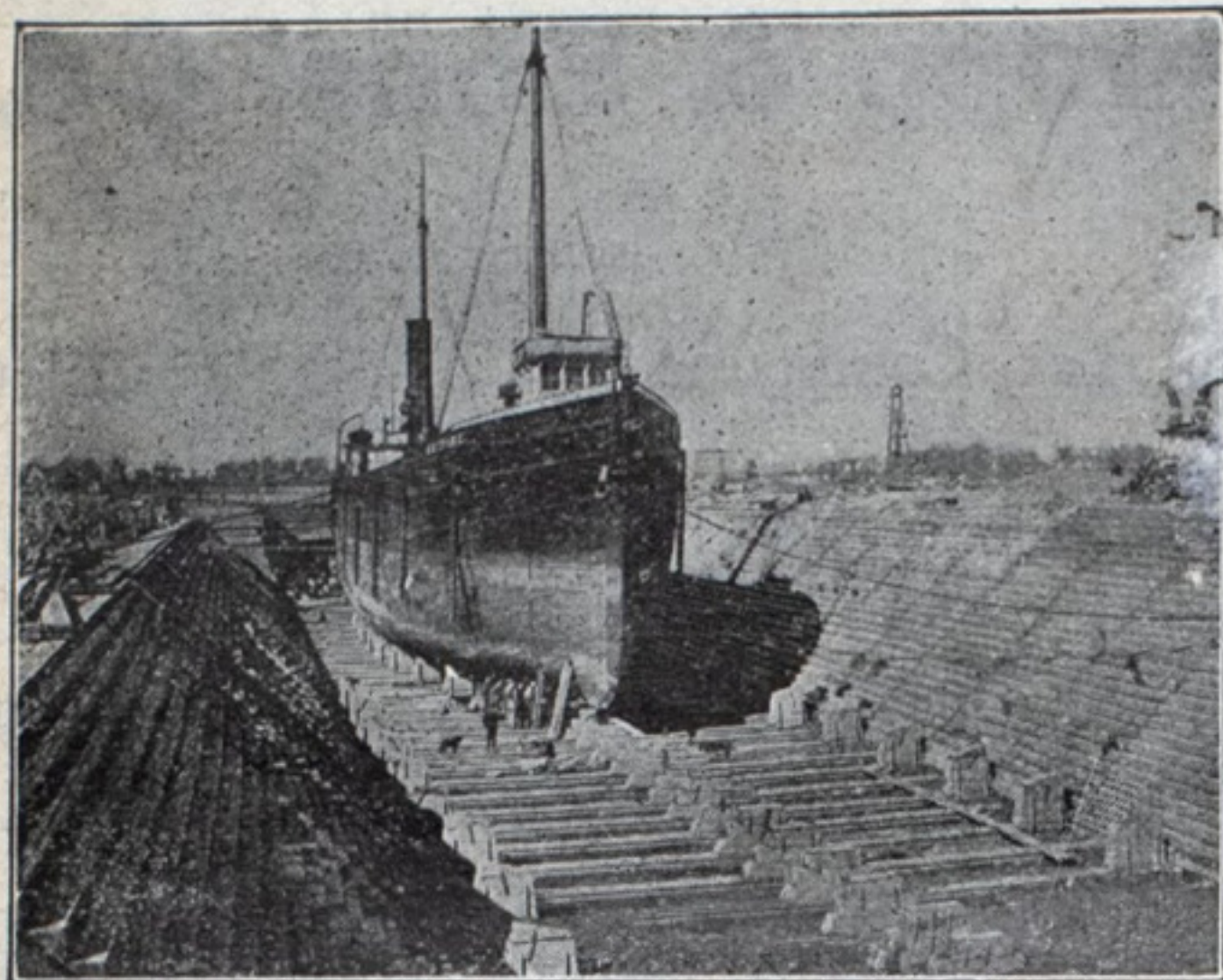
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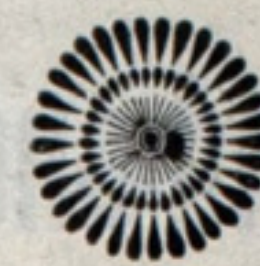
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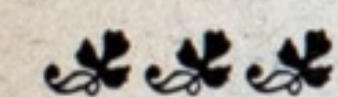
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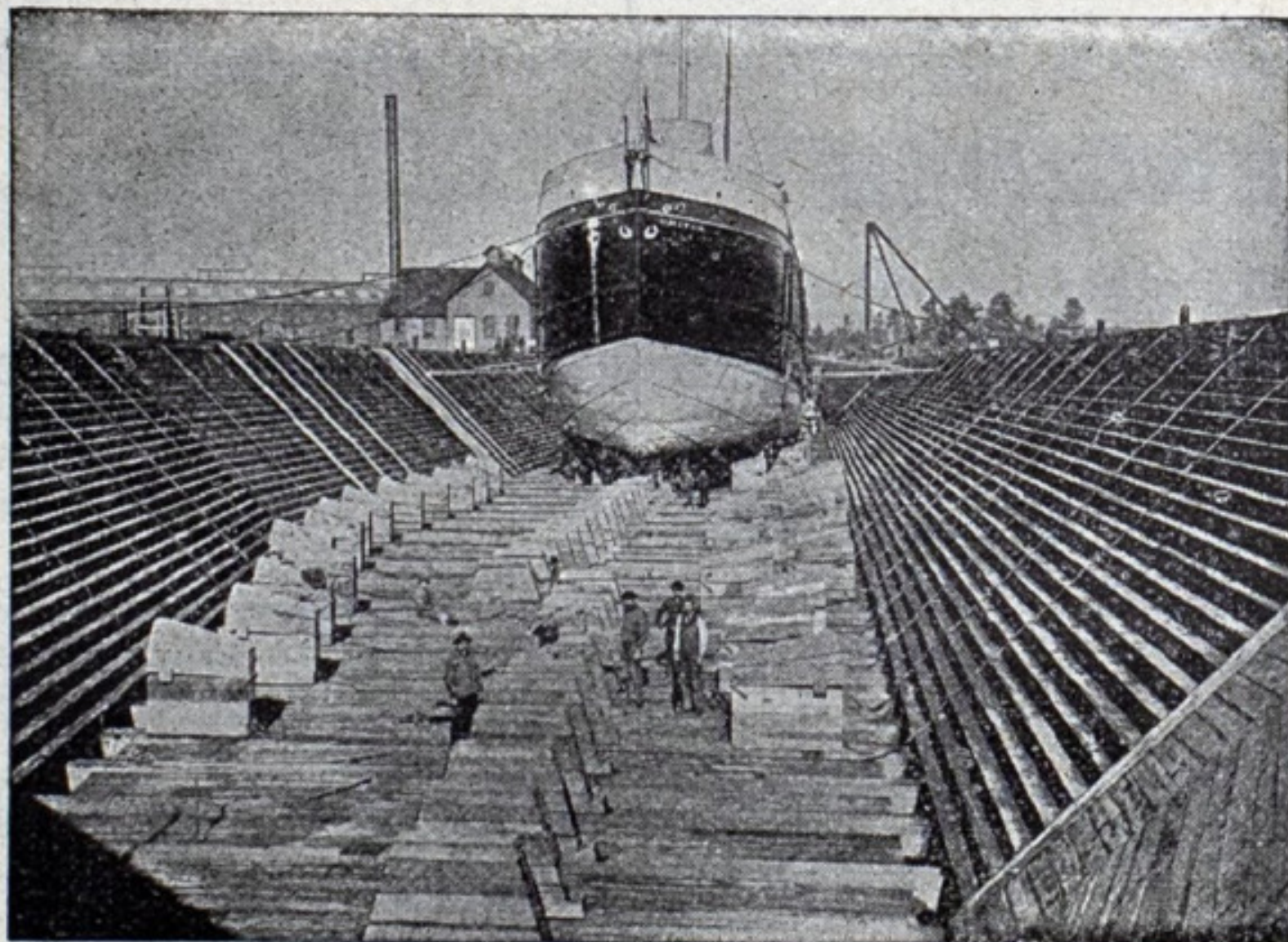
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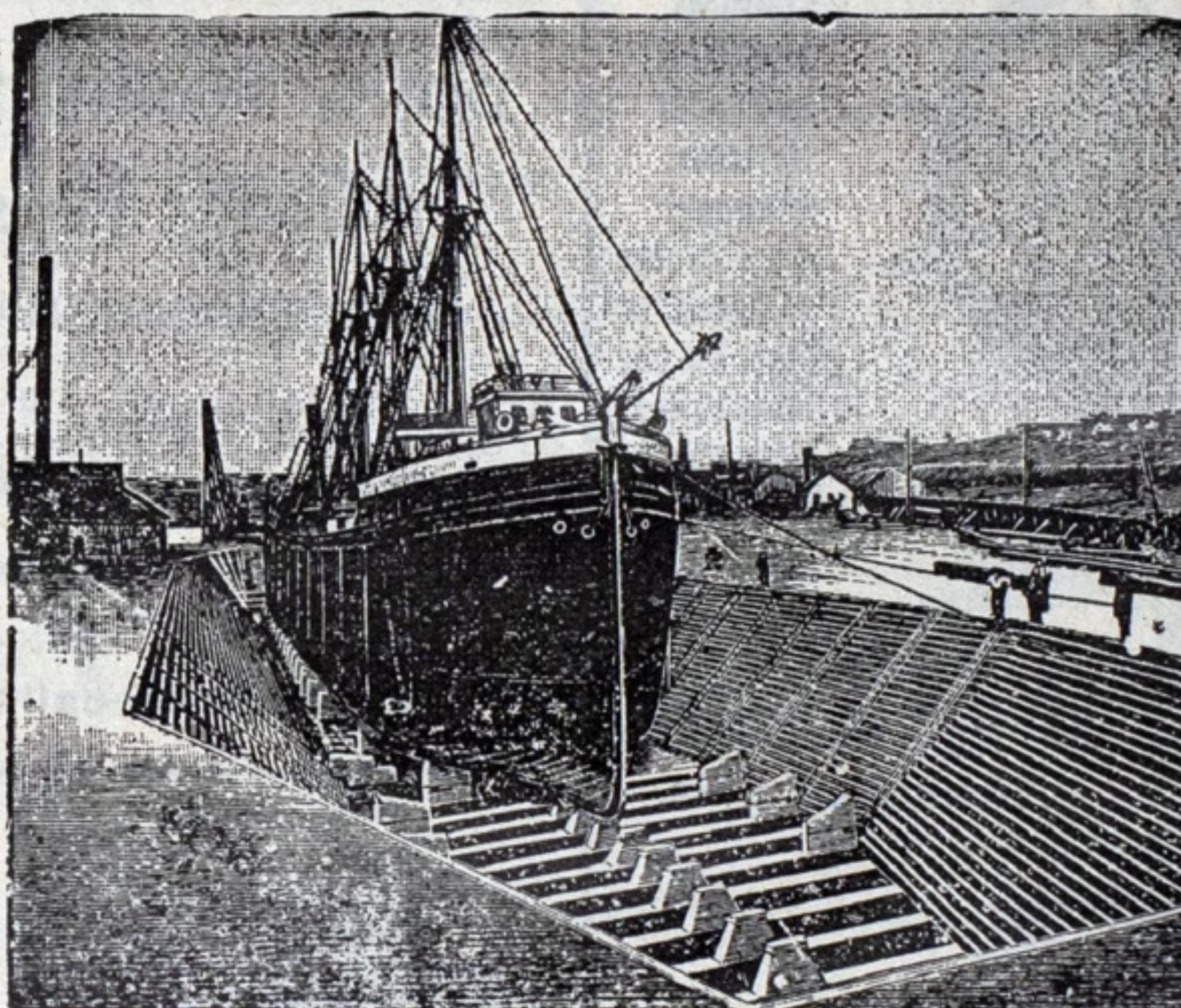
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